MOBILE ASSISTED LANGUAGE LEARNING (MALL): Teacher uses of smartphone applications (apps) to support undergraduate students' English as a Foreign Language (EFL) vocabulary development

Masuda Wardak

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Department of Educational Research

Lancaster University

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Department of Educational Research,

Lancaster University, UK.

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This thesis results entirely from my own work and has not been offered previously for any other degree or diploma.

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Abstract

The purpose of this study is to highlight how smartphones, specifically smartphone applications, can be integrated into the vocabulary development of adult English as Foreign Language (EFL) learners in an English for Academic Purposes (EAP) or English for Academic Studies (EAS) context. In the literature on Mobile Assisted Language Learning (MALL), it is largely claimed that the development of language-related technology is on the increase and that the number of tech-savvy students will also grow in the future. These ubiquitous tools, which may also be defined as widely-used, could potentially improve teaching and learning outcomes in vocabulary development, especially through applications installed on smartphones. However, schools and other higher education institutes have not yet fully integrated these devices into their courses and have mostly perceived them as distractors. Moreover, there is limited research on how smartphones could be utilised sensibly, both inside and outside the classroom. This study, therefore, aims to explore methods and approaches which could facilitate vocabulary development and pre-teach EAP words outside the classroom through smartphone applications, while saving in-class time for other activities.

The focus in the present study is on vocabulary development, as it is considered to be a priority area in language learning. The majority of language teachers and applied linguistic researchers have recognised the importance of vocabulary learning and aim to promote it further. McCarthy (1990) promotes the idea further, stating that the single, biggest component of any language course through the experience of most language teachers is vocabulary. It is the knowledge of words, which expresses a wide range of meaning. The participants in the present study were required to develop their academic vocabulary, this being a common problem area for EFL learners. Academic vocabulary development is important for them, because when submitting academic assignments, learners have a pressing need to use advanced level academic vocabulary items.

This study was conducted using a case-study approach focusing on 20 EFL students at a university in Britain who were attending Pre-sessional EAP classes during the period of the study. Uses of smartphone applications were developed by the teacher, who also acted as the researcher in this study. The focus has been on the students' perceptions, opinions and overall experience of using these smartphone applications in their EAP vocabulary development, as well as how effective they were. The intention was to discover how the tools can be incorporated into the learning process. The data were collected through questionnaires, a pre-

test and a post-test, interviews, diaries and the researcher's logbook. The latter included a written report of the students' daily activities and learning experiences, their challenges and success/lack of success in learning. The study provides a rich description and analysis of the effectiveness of smartphone applications in vocabulary development mainly through qualitative data analysis. Limited use of quantitative analysis is made when reporting through numbers and percentages as well as displaying figures. It is anticipated that the results of the study will help to determine the appropriate use of smartphone applications in the vocabulary development of adult EFL students.

Table of Contents

Dedication

I dedicate this thesis to my deceased husband Hazhar Bahadin for his unwavering support, patience, and faith in me, during the first year of this academic journey. Towards the end of the first year, Hazhar chose to be with Allah. His untimely demise turned my break times into grieving for him and made the completion of this thesis impossible. Hazhar, while you did not survive to see my completion, you continued to visit me in my dreams and encouraged me not to succumb to grief. I still remember you dropping me in the library as I had just begun my research and wishing me luck by saying: “Ya Khwa Sarkawtu be”.

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List of acronyms used

APP(s): Application(s) often used interchangeably in the present study
CALL: Computer Assisted Language Learning
CD: Compact Disc
EAP: English for Academic Purposes
EAS: English for Academic Studies
EFL: English as a Foreign Language
ELT: English Language Teaching
ESL: English as a second Language
ESOL: English for Speakers of Other Languages
FSP: Foundation Studies Programme
GE: General English
GIF: Graphic Information Format
ICT: Information and Communication Technology
IELTS: International English Language Testing System
iOS: iPhone Operating System
L1: First Language
L2: Second Language
LOCH: Language Learning Outside the Classroom with Handhelds
MALL: Mobile Assisted Language Learning
MAVL: Mobile Assisted Vocabulary Learning
MMS: Multimedia Message Service
MP3: Moving Picture Expert Group Layer-3 Audio
PCs: Personal Computers
PDA: Personal Digital Assistant
SLL: Second Language Learning
SMALL: Seamless Mobile Assisted Language Learning
SMS: Short Message Service
Social Media: Websites for Socialising such as Facebook, Twitter, etc.
TCK: Technological Content Knowledge
TESOL: Teaching of English to Speakers of Other Languages
VPN: Virtual Private Network
WVTFM: WhatsApp, Viber, Telegram, Facebook Messenger

List of Images

List of Figures

List of Tables

Chapter one: Introduction

Organisation of the thesis

The thesis is organised into 7 chapters. Chapter one is the introduction and it discusses the problem statement, motivation for conducting the study, background, rationale and scope of the study. The middle of the chapter reports briefly historical links with the study, the use of smartphones in English Language Teaching (ELT) and why vocabulary development is essential in the context of English for Academic Purposes (EAP). The concluding part of the chapter provides a brief description of the applications used in the present study. The chapter ends with the central and guiding research questions. The first part of Chapter two reviews the literature on topics related to the study, including an overview of Mobile Assisted Language Learning (MALL), previous and recent research on MALL integration in ELT, social networking, student achievement, the importance of students' vocabulary development and the gap in the current literature. The literature review also discusses why it is important for an EAP student in a university context to have a developed vocabulary. Moreover, the chapter provides an overview of the incorporation of smartphones in ELT practices and its relevance to the present study. The chapter ends with implications of the study and summarises the supporting and critiquing studies as well as gaps in the literature related to MALL in ELT. The methodology of the study is presented in Chapter three and begins with an introduction followed by the use of the conceptual framework in the study. The second part of the chapter includes details about applying methodology, data collection and instruments, selection of participants, the study design and ethical considerations. Chapter four presents the data and the results obtained using the research tools. Chapter five develops data analysis and data presentation in relation to the conceptual framework. There is a complete and thorough discussion in Chapter six, aligned with what has been found through the data analysis, compared with evidence from the literature review, as well as providing answers to the research questions, evaluating success and lack of success in the study. Chapter seven concludes the study, with a summary of the main points, reporting research challenges and limitations, recommendations, further research studies and contribution to knowledge. The thesis ends with a complete list of the references and sources used in the study, as well as Appendices.

1.1. Problem statement

The field of teaching and learning with smartphones has attracted the attention of numerous researchers for more than a decade, since the invention of smartphones. Considerable research undertaken in the field praises the effectiveness of smartphone integration and reports on the positive attitude of both teachers and learners towards this commonly used tool that facilitates learning (Kukulska-Hulme, 2006). Similarly, the development of smartphone applications used for vocabulary development and created by various developers has been perceived positively and has resulted in numerous applications being developed, created and made available for installation on the Android market, as well as with Apple stores and smartphones (Godwin-Jones, 2011). Moreover, there is a plethora of articles and a published body of work by teachers and other professionals in the field discussing "gadgetization" (Wickham, 2014) and how it has transformed education both inside and outside the classroom. However, little work has been undertaken to examine the quality of the developed applications, the competence and qualifications of the developers who create these applications, the ideal number of words prescribed for learning on a daily basis and, most importantly, their effectiveness in developing academic vocabulary for English as a Foreign Language (EFL) students in the context of EAP (Morris & Cobb, 2004). In addition, it has personally been noticed that the majority of the words are being learnt by rote and mechanically through smartphone applications without being used in academic assignments. Consequently, there is a strong need for review of the design of strategies in order to guide future research in the design and integration of smartphone applications and to bring about successful learning and academic work that meets institutional quality requirements. The present case study focuses intensively on efficient, attractive and interesting (from the teacher and students' point of view) strategies for vocabulary development using smartphone applications as well as motivating EFL students to develop their EAP vocabulary knowledge outside the classroom, informally, in preparation for the formal use of the words in the classroom. The terms 'informal' (acquisition outside the classroom) and 'formal' (use of acquired language inside the classroom) will be used throughout the study. In sum, the study does not only focus on how to teach vocabulary items but it also focuses on how to inspire learners' desire for learning them.

1.2. What motivated me to conduct this study?

The primary motivation for undertaking the current research project has come about because of a lack of academic transfer in advanced level vocabulary in the researcher's EAP students' writing and presentations. While they may have comprehended the vocabulary items taught during the course, they failed to use them in complex sentences or to produce very simple language in their assignments. The students, therefore, have a pressing need to develop their academic vocabulary items. Hence, special care should be taken to enable students to learn academic language, particularly in content areas. This is not only essential for their assignments in pre-sessional courses, but the enrichment of EAP vocabulary knowledge is also a crucial requirement throughout their academic journey at university.

During my pre-sessional teaching since 2011, I have observed usually my EAP students engaged and attached to their smartphones and how they have made them part of their everyday lives. They use a variety of applications, including Viber, WhatsApp, Facebook Messenger and most frequently, Google translator. Alongside the constant use of the aforementioned apps, the observation of their lack of EAP and advanced level vocabulary knowledge, which they are going to heavily rely on in the subsequent months when they embark onto their Bachelor and Masters courses, encouraged the researcher to conduct an initial vocabulary intervention in 2015 and again in 2016. The intervention was similar to the present study (discussed in more detail in the Discussion chapter, 6.2.) and the successful outcomes of the initial intervention conducted as a practitioner, encouraged the researcher to apply for the degree of Ph.D. in Educational Research and conduct the present study as a researcher. I developed an interest in aiming to not only conduct this study but to investigate how to utilise smartphones into learning and how effective they might be, particularly for vocabulary development.

Findings and outcomes from the present study could make a significant difference to my work in the pre-sessional course, as well as adding value to the field of 'English Language Learning with smartphones' in those contexts. The concern for this study is supported by Corson (1997) who indicates how for writers with academic purposes, it is essential to gain productive written control of the Graeco-Latin vocabulary of English in order to be recognised as a member of the academic writing community. Laufer's (1994) studies also show that university students generally demonstrate progress in this area, with an increase in academic vocabulary in their writing. Similarly, Leki and Carson (1994, cited in Nation,

2001), found that second language learners see a lack of vocabulary as the major factor affecting the quality of their writing. Here, not only second language learners, but EAP teachers also, face the challenges of preparing students for success in content classes (Fitzsimmons-Doolan et al., 2012, p.256).

The idea of daily informal teaching to learners through mobile telephones first started in 2009 when I was teaching ESL to Foundation Studies Programme (FSP) students at a university in Afghanistan. However, during that time, smartphones were not so common and widely available to the majority of the students, especially with internet connectivity. The rudimentary approach, therefore, was to send 6 new words per day with definitions via instant or plain text messages. No images, pronunciation, examples, or word-families were provided. The words were also received by non-smartphone owners as the mobile network was used, instead of the internet. As the sender of the messages, I incurred mobile data network charges while the learners received them without costs. But, having noticed my learners' engagement in the learning and how effective they perceived the approach, I considered the negligible charges worthy of their successful learning. Although the approach chosen was not based on conducting a research study, but only to assist my learners in the development of their vocabulary items. As a result, the end of course feedback was tremendously positive and my efforts were appreciated immensely. In the same manner, another significant professional intervention was implemented prior to the formal empirical study, which provided important motivation for the study.

1.2.1. Why incorporate professional intervention?

Prior to conducting the present study in 2017, an initial vocabulary intervention (also perceived as professional intervention) was incorporated to the pre-sessional summer class students at the same university, in 2015 and 2016. A large group of Arab and Chinese students arrived to attend pre-sessional summer AEP classes at the university where the researcher works, and where the present study was conducted. The students in both groups had taken IELTS examinations in their home countries and had obtained a score of 4.5 and above before arriving in Britain. The aforementioned score is just about sufficient to aid the students in intermediate level communication in the English language. However, when they started attending the pre-sessional classes, the contents of the course books and the language knowledge required was at IELTS 6.0 level and above. Furthermore, a similar score (6.0) or

above is required for most undergraduate and postgraduate studies at universities, which is usually intended to happen after the completion of the pre-sessional courses. Although the pre-sessional courses aim at enriching the newly-arrived students' English language knowledge both in terms of general and academic English, very few learners manage to benefit from these courses and embark on their major degree courses, hence lacking academic skills and required knowledge and proficiency in general English language.

In the same manner, socialising groups were created and students were added to the groups according to their preference for a particular type of application. The target words were sent in the same manner, alongside their definitions, audio pronunciations, derivatives, examples and images. However, the words selected in the professional intervention were not exactly the same as the words selected for the main study. Only a few words that were based on proficiency level or EAP level were the same. The reason for this was because the course books used in 2015 and 2016 were not the same books that were used in 2017. The following paragraphs report the reasons for conducting the intervention, the intervention's success which resulted in conducting the empirical study, any challenges or issues faced during the intervention, and if so, how the challenges were dealt with then and how the challenges were avoided in the present/main study.

One reason for the lack of progress of students in vocabulary learning is the time constraint. Despite the comprehensive nature of the scheme of work and a syllabus designed for the pre-sessional courses, most of the time in the classroom is spent on group activities, speaking activities, and extended writing practice, which is a crucial requirement for academic assignments, as well as covering other academic study-related parts of the instructional planner. Very little attention is paid to vocabulary development and there is no formative or summative assessment that could test the academic vocabulary knowledge of the students. Similarly, there are no activities that could be incorporated which could assist the learner in enriching their limited academic vocabulary knowledge. It is usually the teacher who is expected to come up with activities and materials that could boost the students' word-power. And again, this is not always possible, due to prioritising other components of the instructional planner. Time-constraints, lack of vocabulary building materials and resources, and the intensive nature of the pre-sessional course, left the researcher with only one option; language practice outside the classroom.

Having observed the Arab students' high use of 'WhatsApp' and the Chinese students' 'WeChat' and Facebook Messenger applications, it was deemed appropriate to create a learning community where the learners felt familiar with and comfortable with other group members, while actively engaged in the learning, in the comfort of their own homes. As a result, 3 groups of WhatsApp, Viber and Facebook Messenger were created and learners were added to the groups in their favourite application. They received the target vocabulary items in their chosen applications, for six weeks. However, no recommendations were made for installing a vocabulary learning application, one similar to the Stage 1 (AWL) application of the main study. This was due to two reasons: some learners had already installed similar applications in their smartphones and brought with them from their home countries, whilst others did not seem interested to use such applications. In both cases, students would not have received active input for developing their vocabulary knowledge, as they did through the socialising applications.

1.2.2. Was the intervention successful?

As expected, the professional intervention was successful at improving the students' academic and advanced vocabulary knowledge. Positive feedback both inside the classroom, and in the application groups, showed that the students benefited from the treatment considerably, at least for the successful completion of their pre-sessional course. The screen-shots in Appendix 2 show the extent to which the students felt satisfied with the treatment, in addition to the expression of gratification. On a more informal basis, the students from other teachers' classes had also expressed interest in joining the groups, after receiving positive feedback from the students in the researcher's class. It was, therefore, a win-win situation where the students benefited from additional support with their language, and the researcher was not only successful at developing her students' word knowledge for the professional intervention, but also received appreciation and acknowledgment from the course leader for trying new approaches in teaching, by incorporating smartphones outside the classroom.

1.2.3. Challenges encountered during the intervention

The integration of smartphones for learning will usually entail disadvantages that may have also been reported in previous studies, and these often refer to the use of mobile telephones in the classroom. The present study, however, was based on the use of smartphones 'outside' the

classroom. The disadvantages, therefore, were not related to distraction, and lack of concentration on the contents of the lesson in the classroom, as reported previously; by contrast, the cons were mostly related to participants' behaviour in the groups in which they were added. During the professional intervention, the researcher encountered minor challenges, which were dealt with in a professional manner. The perks of these challenges were that the researcher made sure that the main study was immune from such challenges by taking necessary actions for preventing the occurrences of similar challenges. However, the main study encountered different challenges that were not expected and that had not happened in the intervention, which will be discussed at the end of the present study. Following are examples of the aforementioned challenges during the professional intervention and how they were dealt with.

To begin with, in the professional intervention, some group members made jokes about some of the words sent, which were slightly inappropriate. For example, one of the group members after receiving a target word 'apparent' commented: *'it is apparent that x fancies y'*, using names of two of the other group members. This issue was dealt with in the welcoming message of the main study, by informing all participants and group members to avoid using such remarks, which could offend other group members. Also, some group members in the professional intervention messaged friends in the group and asked personal questions such as how they were feeling or what they were up to, which should have been privately messaged, instead of messaged in the group (see the screenshot in Appendix 2C). This issue was avoided in the main study by informing the group members that any non-vocabulary-learning related issue should be privately messaged and not communicated in the group, as these do not concern or relate to other group members.

The professional intervention reported above is also preferred and supported by practitioners reported in previous studies (Rainie & Lewis, 2001; Shiu & Lenhart, 2004; Flanagin, 2005, cited in McVaugh, 2012). In the same study by McVaugh, findings revealed that between 70% and 90% of undergraduate students used instant or text messages on a daily and weekly basis, despite per message charges. A large amount of texting is also documented among American teenagers, on average 3,000 texts per month (Lenhart, 2010, cited in McVaugh, 2012). Luckily, in the present study, there are no charges incurred upon me as the facilitator, or upon my participants as the receivers, since the words are sent via installed apps on their smartphones. The applications require internet connection, which is included in the mobile network data plan, when Subscriber Identity Module (SIM) cards are first purchased.

Moreover, the majority of the international students (similar to those in the present study) usually have the internet activated on their smartphones in order to be able to keep in contact with family and friends. To re-iterate, the participants were not required to activate internet in their smartphones and pay extra for their participation in the study. But, they had already possessed smartphones with internet at no extra cost.

Last but not least, the present study will seek to provide an answer to the problem stated in "Learning for the 21st Century" (2003, cited in Jenith-Mishne, 2012). The results in their study demonstrate that educators and students agree about many aspects of integrating technology into the classroom setting, but, the challenge is to close the gap on a digital disconnect, helping students learn in a way that is more aligned with how they live. The present study potentially fits in the context of developing informal learning and teaching in a way that suits learners' everyday lives, through a tool that is considered inseparable from them.

1.3. Background

The literature on MALL has prominently opened new directions in Computer Assisted Language Learning (CALL) where users have more flexibility in learning in terms of access and portability that did not exist in non-mobile CALL (Ballance, 2012). In the same article by Ballance, Godwin-Jones (2011) also supports the idea of app-based MALL activities, given the recent technological advances that also exploit touch-screen technology, designed to be used in the situations MALL has introduced. The following main points will be discussed as background to the study: a conceptual exploration about the nature of language learning and vocabulary development, researcher's own autobiography as a language learner, language learning globally and how it can be made more interesting; the importance of developing students' EAP vocabulary knowledge; technological innovations and an increase in 'tech-savvy' students; the emphasis on vocabulary development and whether teachers would consider the integration of smartphones in their daily lessons; and how the present study may contribute to vocabulary development with smartphones.

1.3.1. The nature of language learning and vocabulary development

Language learning involves an active process that is continuous, recursive, as well as informal in the case of the first language. As far as second or foreign language acquisition is concerned, language learning in adults takes place through internal mechanisms as stated by Scheffler (2008). Formal instruction may not be able to register a direct impact on such mechanisms. In other words, an instructor's formal teaching approaches may not cater for students' own learning approaches that are based on their internal cognitive mechanisms. However, educators may utilise instruction approaches that create multiple opportunities for learners to acquire language skills in their own ways. Alongside internal mechanisms and learners' personal practices, the focus on learner engagement also empowers students to gain implicit knowledge while understanding explicit rules governing the new language. The process of language learning involves the acquisition of complex skills and the method of instruction should embark on the initiation of the natural language acquisition process. Consequently, adult language learners need to exhibit a measure of proficiency after a rigorous process of activating subconscious linguistic competence in different elements of language learning.

I will briefly expand on the development of language and its elements. The complexity of a language lies in its several components and they can be described as follows:

- Phonology: the sounds and pronunciation
- Semantics: how meaning is conveyed
- Syntax: how grammar is used
- Lexicon: how vocabulary is acquired
- Pragmatics: wise and sensible use of language (formal and informal) in its social context
- Morphology: basic units of the meaning and the smallest building blocks such as affixes that also aids vocabulary development.

These components are mostly discussed in relation to children's first language acquisition. However, morphological and phonological aspects are included in the present study for the development of students' vocabulary (the focal point in the study) in their second or foreign language.

Existing evidence demonstrates that the acquisition of the first language exhibits certain differences from the acquisition of the second language. Language learning occurs outside the classroom as part of the lifelong process of language acquisition (Derakhshan & Karimi, 2015). Beyond the classroom experiences, self-directed language learning takes place. In addition, for second language learners, beyond the classroom experiences contribute significantly to the acquisition of the language (Lai, Hu & Lyu, 2017). One major approach that promotes language acquisition outside the classroom in modern-day learning and teaching is the use of technology that has shifted the process of language learning, a factor that reveals the need to understand language-learning experiences with technology. In the present study, the focus is on vocabulary development outside the classroom, which is an important aspect of overall language acquisition (Lavasani & Faryadres, 2011) and it is implemented through the use of modern-day technology (smartphone applications). Research evidence reveals that vocabulary development is a lifelong process as an individual enhances proficiency in a specific language. In the present study, the argument revolves around how vocabulary develops in a limited time span (10 weeks) that is available to international students studying in Britain.

As regard the importance of vocabulary acquisition in language learning, a body of important empirical evidence alongside theoretical insight have confirmed that lexis and vocabulary play a crucial role in a language and this is long acknowledged by researchers. One of the major challenges of learning and producing a language whether L1 or L2 is not in syntax, but it is in lexicon (Singleton, 1999 cited in Choo, Lin & Pandian, 2012). Language learners have also confirmed that vocabulary knowledge is of primary importance and the inadequacy or lack of this knowledge has resulted in difficulties in both receptive and productive language use (Nation, 1990). Laufer (1998) and Lewis (2000) have also confirmed that the number of words and sufficiently large vocabulary both native and non-native English speakers possess determines the most striking difference between the two groups. Most of the debate on vocabulary acquisition has been on whether explicit attention to teaching is absolutely necessary. While some studies support the theory and others oppose it, Nation (2005) asserts that deliberate attention to vocabulary should be involved in every language course. Various previous studies have similarly supported the importance of vocabulary acquisition. The two major learning intentions are called incidental and intentional vocabulary learning. While one intention is favoured over the other by a handful of previous researchers, the majority believe that it is only a matter of selective attention and elaborated processing (Choo, Lin & Pandian, 2012). The absence or presence of these two learning intentions does not play a decisive role,

since it is the nature and frequency of the processing of the new words that determine vocabulary acquisition first and foremost. In sum, whether incidental or intentional, none is necessarily more effective than the other (Brown, Waring & Donkaewbua, 2008; Laufer, 2005; Read, 2004; Nation, 2001).

1.3.2. Researcher's own autobiography as a language learner

Through my own experience of learning English as a foreign language, I aim to support my argument regarding the importance of vocabulary development in EFL. In school, while grammar was usually a priority area in the course book as well as receiving particular attention and allocated time during the lesson on syntactic practice, vocabulary acquisition on the other hand was neither substantially included in the course book, nor prioritised by the instructor during the lesson. Ultimately, it was ignored because reading texts contained most of the target words and the definitions were usually expected to be known from the context. The only aid provided was paper mono-lingual dictionaries which I very rarely accessed. Time constraint in the classroom, the instructor's busy scheme of work and not having a classmate who spoke my first language, persuaded me to go through the reading texts at home, extract all new words, search for the definitions in a bilingual dictionary and bring my own hand-written word bank with me to the class for the subsequent lesson. Similarly, I did not concern myself much with grammar as I diverted most of my attention towards vocabulary development. The reason for this was not only my personal interest in developing my word power, but living in the target language country, and hearing grammatically incorrect phrases and sentences from the native speakers (such as 'He don't have nothing', 'You wasn't there', 'She weren't good'), I was not encouraged much to pay attention to improving the syntax. Not only the motivation to learn new words, but the display of my verbosity both inside and outside the classroom promoted the acquisition through the use of my personal concerns that affected the learning process in the absence of explicit vocabulary development approaches prescribed by the teacher or instructed in the course book.

1.3.3. Language learning around the world and its relevance to the present study

Language learning has attracted significant attention in the modern world due to the opportunities that individuals have to learn new languages. However, with the increased

focus, educators have been required to embrace new methods or approaches in order to make the learning experience less challenging for the students (Courduff et al., 2014). MALL was introduced to address this concern. Similarly, with the increasing attention on MALL, questions should be posed about, for example, its effectiveness in meeting learning outcomes, the perception of instructors towards the technology as well as the various approaches to the implementation of the technology (Hemmi et al., 2014). Taking this into consideration, the present study focuses on the effectiveness of smartphones and smartphone applications in EAP vocabulary development of EFL students attending pre-sessional courses (10-20 week courses attended during the summer in preparation for major degree courses starting in Autumn).

1.3.4. The importance of developing students' EAP vocabulary knowledge

Bearing in mind the requirements of a proposed study where EFL students aim to develop and increase their vocabulary, it is important to know how to measure a student's level of vocabulary and to see how this is suitable for enriching the student's wider use of vocabulary. According to Read (2000), international students undertaking upper secondary or university education through a new medium of instruction simply do not have the time to achieve a vocabulary size that comes close to that of a native speaker. For them, the focus of vocabulary research shifts to the question of what minimum number of words they require to cope with the language demands of their studies. Most British universities offer 10-20 weeks' pre-sessional and in-sessional EFL courses to their international students. Here, the focus is on English for academic purposes and preparing the students for their major degree courses. These courses follow a specifically designed set of curricula and scheme of work. However, despite the importance of improving academic English, very little attention is paid to the students' vocabulary development or to adding a component to the scheme of work that specifically focuses on this particular area in language learning.

In order to emphasise further the importance of a developed vocabulary for the language learner in general, the present study presents a visual model of this fundamental requirement using a living room as the frame of the model (Image 1.1). According to Dunleavy (2003), "some attention points are not in the least numerical, but simply visual, re-presenting relationships than can be easily accomplished by description". Thus, visual representation can assist in achieving clarity and focusing on key issues in the nature of the phenomena being discussed (Cohen et al., 2011). If a person considers building a house or just a room (this

could be a "living room", for example), a firm, strong and even base is required to build on. It is then necessary to erect walls to create the square or rectangular model of this living space. The next part of the building is the roof, which will complete the basic structure. For more advanced and additional features of this living space, the inclusion of furniture and other decorative items might be considered. Should each part of the building be related to a language component and their importance be compared, the model would have an appearance such as that shown in Image 1.1.

Image source: http://teaone.net/design-living/2139-Interior-Design-For-Living-Room-And-Dining-Room.html

Image 1.1: The importance of vocabulary development and other linguistic skills

It is possible to disagree with this model and argue that there could be a lack of literacy skills (reading and writing) in a person's first language or other languages. People with such limitations are likely to deal with their day-to-day life without major problems or language barriers using the available linguistic competence of speaking and listening, and a reasonably-sized vocabulary and grammar. However, in this case, how could the four walls in the above model in Image 1.1 be perceived to be of equal importance and a person be able to live with two walls (speaking and listening skills) without major issues? One possible counter-argument or justification could be that such limitations could be addressed if there are two protective walls (speaking and listening skills) and a firm base (knowledge of academically

agreed vocabulary) but it is less likely and unsafe to locate a roof over two walls only. In this case, there is only one option available: a non-concrete, flexible structure similar to a tent where the two walls (reading and writing) may be merged with a curved roof, leaving a separate wall at the back (speaking) and an entrance wall at the front (listening). The reading and writing walls have been merged with the roof and are not necessarily needed (see Image 1.2).

Image source: http://www.gooutdoors.co.uk/freedom-trail-sendero-4-tent-p286258

Image 1.2 Lack of important linguistic skills (reading and writing)

Here, life in the comfort of an adequately-sized living room with a strong base, four concrete walls and a roof, as well as plenty of space for other furnishing items (enhanced language skills) can be compared to a life in a canvas or nylon tent. A tent is usually designed for temporary accommodation and survival, with a limited size and a limited possibility of furnishing it with other necessary elements. Most importantly, the tent's resistance against adverse weather conditions has to be evaluated. It could, therefore, be argued that a person who is unable to read and write, but who has a good command of speaking and listening skills, is perfectly able to survive life in his/her linguistic world, but will mostly be relying on the help and assistance of other people when reading and writing skills are required. For example, when required to produce a written piece of work or comprehend an important message written on a shop window, notice board, signboards or just following simple instructions, it is only then when the importance of literacy skills is really felt.

Most EAP/EAS textbooks clearly state their learning objectives at the beginning of each new unit. While the four skills (reading, writing, listening, speaking) are the core objectives of almost every unit, vocabulary is also included in the list of learning objectives (e.g. to learn/to consolidate vocabulary items related to…). However, when it comes to formative and

summative assessments, there is no individual or stand-alone assessment to assess the development of learners' vocabulary. The knowledge is only assessed through the production of the other four skills. If students are provided with assessment, or instructed to develop their vocabularies for an assessment, they are more likely to put efforts into improving their vocabulary knowledge. So, despite its importance, vocabulary input is largely ignored and considered less important than other components when it comes to language assessment.

1.3.5. Technological innovations and the increase of 'tech-savvy' language students

In a statement by Viberg and Grönlund (2013), the ever increasing development of language-related technology, especially the web-based technologies, explains the increased number of 'tech-savvy' students, and there are prospects for this to increase in the future. They also suggest that mobile technologies have the potential of improving teaching and learning outcomes, especially in second language (L2) and EFL learning. Technological innovation from the present study's perspective consists of three categories: 1. current teaching practices are enhanced through the use of modern and advanced tools, such as smartphones; 2. current teaching practices are transformed with the help of these innovations for example: students are no longer provided at the start of their course with a long, mundane, exhaustive and printed hardcopy list of vocabulary items to learn. They could be provided with their target words in much smaller chunks, on a daily basis, through a tool which is inseparable from them and receive the words in a much more attractive and interesting way; and 3. current teaching practices are altered with the help of these innovations. For example, students use classroom time for more interactive pair/group work and discussion activities that cannot take place outside the classroom. The time outside the classroom is spent on developing their language that cannot be developed substantially inside the classroom due to time constraints and which is required for the subsequent tasks in the classroom.

1.3.6. The possibility of language teachers considering the integration of smartphone technology in daily lessons

With regard to the integration of technology into everyday teaching, a popular question asked by many professionals in the field might be - why would a language (or any) teacher choose to opt for traditional teaching methods when there is a plethora of modern, technologically-

based options available that are not only able to enhance learning and teaching but also engage the learners with learning tools, which they enjoy? Possible explanations might be based on the quality of the software and its appropriateness for the task, planning, organisation, competence and knowledge level of both administrators and instructors, and their necessary skills at employing technology in the classroom (Wardak, 2015). Notwithstanding, the present study does not aim at challenging the language instructors to employ advanced and complicated software in their teaching, but encourages them to use technological tools that are part of the learners' everyday life - and almost all of the learners are familiar with their smartphones. The main requirement from the language instructor though, is their commitment and dedication in spending an amount of time to teach tasks that could be taught outside the classroom while saving 'in-class' time for tasks that may not be taught outside the classroom, such as speaking activities.

As mentioned previously, the skill and language component chosen for the present study is the development and acquisition of academic vocabulary items, which is usually pre-taught in the majority of English language classes. Vocabulary pre-teaching prepares the learners for the reading, writing, listening and speaking tasks that take place subsequently. Most of the EFL, English as a Second Language (ESL) and English for Speakers of Other Languages (ESOL) classes will probably go through the following stages to pre-teach the target language:

- Allocate the first 20-30 minutes of a 3- or 4-hour class, towards pre-teaching vocabulary. Write the words on one side of the board and ask the students to find the meaning of the words in their bilingual dictionaries, discuss with their partners or simply guess the meaning from the context.
- Give the students the target vocabulary items a day in advance and ask them to search for the meaning at home and come to classroom equipped with words and their meanings.
- No pre-teaching of vocabulary items, but go through the course book, read the text and go through the new words as students read, which might take 1-2 minutes per word to explain, give examples and check pronunciation. There will usually be around 8-10 new words in 200 words of text, which again takes about the same amount of time as the pre-teaching at the beginning of the lesson. The added disadvantage is interrupting the reader and the text constantly to go through the meaning of the new words. The explanation and definition of the new words will usually be in English to English,

which some students may find difficult to understand. English to English definition does not usually stop learners from looking the word up in their bilingual dictionaries and re-checking for the meaning in their first language (L1).

- OR, based on the aim of the present study; save classroom time for discussion and tasks that cannot be done at home. Send the new words with images and definitions as well as examples and pronunciations to students as Multimedia Messaging Services (MMS), on a daily basis, and prior to attending the new lesson (as can be seen in the two images (1.3A and 1.3B) following, which also show examples of how participants received their daily words prepared by the researcher in the present study). This could potentially be enjoyable, interesting, useful and save the classroom time for other important tasks. Doing so will include English to English definitions, but it will also allow students ample time to search for the meaning in their L1, if necessary.

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Image 1.3.A Example of multimedia messages sent to participants daily

Image 1.3.B Example of multimedia messages sent to participants daily

Nonetheless, would all teachers agree to allocating additional time at home to prepare these vocabulary items to be sent before every new lesson and give consent to sharing their identifications and mobile numbers with their students? Explanations may revolve around instructors' dedication, willingness, understanding of the benefits that are possible and the amount of experience in using technology to do so.

1.3.7. How will the present study contribute to vocabulary development with smartphones?

Numerous previous studies have discussed and reported the popularity of teaching and learning with technology. The most popular term used in the majority of recent studies is "Blended Learning", a combination of face-to-face and online instructions planned in a pedagogically valuable manner (Bonk & Graham, 2005; Picciano & Dziuban, 2006, cited in McAliney, 2013). The present study, however, combines face-to-face classroom learning with smartphone integration. The study discusses how formal classroom language could be taught

and delivered informally through smartphone applications while preparing the students for the formal use of the acquired words inside the classroom.

Another important factor to consider when discussing technologically enhanced learning, or as mentioned above "blended learning", or the combination of the two, is the establishment of a community. In contrast to online learning, where students and learners do not have the chance to meet face-to-face, arrange formal online courses, create online communities and in some cases fail to create a successful online community or evolve fully into a community of practice (Karagiorgi & Lymbouridou, 2009, cited in Kulavuz-Onal, 2013), the participants in the present study had already shared a physical space in the classroom, met face-to-face, known each other as classmates and had already built a sense of community and belonging. In this context, therefore, they should not feel isolated within the smartphone groups, but work with other group members collaboratively and make use of peer evaluation and peer feedback, since they were all able to monitor each other's activities by finding out if they had "seen" or "read" the messages.

1.4. Rationale and scope of the study

This study addresses the limited research on how to apply research-based recommendations in new ways, using digital tools – namely, to deploy technology, and smartphones in particular, in the service of vocabulary learning. Smartphones and other similar resources are readily available and easy to use. It therefore seems logical to utilise other means of increasing vocabulary size that require less teacher effort (in the classroom) and less classroom time consumption, and which have numerous other benefits too (Nation, 2001). Further to this, there is also a lack of research on the efficient implementation of smartphones. Previous studies have shown that there is even a support for banning smartphones in the classroom that could otherwise prove to be a solution to the vocabulary gap when used flexibly and sensibly in response to students' varied needs and interests.

The basis of a study focusing on MALL stems from the fact that wireless communication has brought about a transformation in all fields including the education sector. However, mobile telephones with higher capabilities have also been introduced. The widespread use of sophisticated mobile devices has changed the face of e-learning (according to Lynch, 2017), and mobile learning is currently the much-anticipated next generation of e-learning.

Conversely, the need for and the use of MALL in learning stems from the fact that the technology concerns information and is also ubiquitous, personal and informal. Moreover, MALL is useful when individuals have limited time for classroom learning.

Within the scope of the study, this research examines the vocabulary development of EFL students attending pre-sessional EAP classes. Here, the participants use two types of smartphone applications for vocabulary development, namely installed applications particularly designed and developed for vocabulary learning, and socialising applications used for everyday communication with friends and family. The results, which will report on the effectiveness of both applications, will be evaluated at the end of the study. The study focuses on the practices of the EFL group, both inside and outside the classroom in terms of the commonalities and differences in the experiences of the students, and on any differences in outcomes over a ten-week learning period. The outcomes will be determined through pre- and post-tests of 400 academic vocabulary items at the end of the ten-week learning period.

1.5. EAP and pre-sessional courses

What is academic vocabulary and how do pre-sessional courses assist EFL students in developing it? Academic vocabulary in a book by Nation (2001, p.187) is described as the following by several other researchers: "generally useful scientific vocabulary" (Barber, 1962 cited in Nation, 2013); "sub-technical vocabulary" (Cowan, 1974; Yang, 1986; Anderson, 1980); "semi-technical vocabulary" (Farrell, 1990); "frame words" (Higgins, 1966); and "academic vocabulary" (Martin, 1976; Coxhead, 2000). Nation further claims that "typical academic vocabulary list includes words such as 'accumulate', 'achieve', 'compound', 'complex', and 'proportion', which are common in academic text and not so common elsewhere".

Pre-sessional courses on the other hand are largely aimed at preparing EFL students for their major (Bachelor's or Master's Degree) courses. The curriculum designed for these courses focuses on EAP, where students learn how to write academic essays, publish blogs and deliver presentations. Alongside EAP classes, students may also attend General English (GE) classes where they have the opportunity to improve their reading, writing, listening and speaking skills. The core components for developing the above skills in both EAP and GE are grammar and vocabulary competence. Having observed in my current profession over the years, it is usually the lack of development or progress in the students' grammatical

competence and vocabulary knowledge, which results in unsatisfactory marks at the end of the course when the students fail to produce an assignment that is of an appropriate academic standard. The present study aims to find out if it is possible to assist these students in developing their vocabulary knowledge in a limited time using smartphone applications with teacher support.

1.6. Mobile telephones and their integration in ELT

Technology has brought about profound improvements in the education sector (discussed in more detail in chapter 2) and as such has been a support for teachers to address diverse learning needs. As far as the history of mobile telephones and their integration in English language teaching is concerned, research on teaching with mobile telephones is not new, despite its considerable transformation like any other electronic device. The transformation of mobile telephones into smartphones, or the birth of smartphones, took place in early 2007 with Apple telephones which, according to Steve Jobs, the Chief Executive of Apple, was "a revolutionary and magical product that is literally five years ahead of any other mobile phone" (Arthur, 2012). These smartphones as well as other popular brands such as Samsung, Sony, Nokia, Blackberry, etc. became widespread in the 21st century, each one of them leading the market competitively. Most of them produced after 2012 offered a high-speed internet service or broadband, many advanced features such as digital cameras, voice recorders, navigation unit, touch screen user interface and most importantly, the ability to install third-party applications from Android markets and Apple stores.

Research on smartphone integration in language teaching began with basic mobile telephones when the only feature available for the researchers was "text-messaging". The short message service (SMS) was sent to participants and the skill or language component covered in previous studies was usually vocabulary teaching. Multimedia Messaging Service (MMS) or video, audio, or image files could not be sent to the recipients' handset, but the recipients had to access and open a web browser to receive the MMS and view the file. Socialising applications such as the ones used in the present study (WhatsApp, Viber, Telegram and Facebook Messenger) certainly did not exist and there was no possibility of creating a virtual learning group, where learners could be added to the group and contents shared with all group members via the chosen application.

Research on vocabulary learning with mobile telephones will always receive a renewed attention from language teachers and researchers. This is possibly because these 'little wonders' of the modern world have not and will not cease to surprise their consumers. Their technological advancement is in a constant state of update because of the constant development of new technological tools. By the completion date of the present study, many new advanced features of the device used in the present study will have been introduced to the smartphone market that might be lacking in the current tools. One may also predict that in the future, the advanced features of these smartphones may even answer questions related to the efficacy of smartphone use in education and fill the research gaps discussed in the most recent research undertaken with smartphones. Similarly, today's research on vocabulary development with smartphones will possibly be updated with research studies in the future. It may also be safe to predict a "genie-phone" in the future, with features that are not available in the most up-to-date smartphones, surpassing all current smartphones, just like the current smartphones made the old mobile telephones obsolete.

As mentioned above, teaching with mobile telephones is not new. Previous studies (Wong & Looi, 2010; Motallebzadeh & Ganjali, 2011; Miangah & Nezarat, 2012; Azar & Nasiri, 2014; Wu, 2014, 2015; Tosun, 2015; Wang, 2016) have reported the integration of this device in teaching and learning of English language. In terms of originality and adding knowledge to the field, the present study is almost certainly original in some ways as stated by Blaxter, Hughes and Tight (2006). They define originality as a major piece of new information, continuing a previously original piece of work, unoriginal but competent piece of research, and adding to knowledge. The present study will establish its conclusions by depending on comparison (Sapsford & Jupp, 1996), reporting similarities and differences between the present and previous studies. Likewise, the present study seeks for originality of thinking in the following areas: the integration of smartphone "socialising applications" such as Viber, WhatsApp, Telegram and Facebook Messenger versus an "installed vocabulary learning application" for explicit teaching of vocabulary items with images and sounds as multimedia messages (contrary to many previous studies where words with definitions only were sent as text messages); and, most importantly, the covert monitoring of the facilitator by checking not only the delivery reports of the messages but the "seen" and "read" statuses shown in the applications by the group members as well.

Moving on from the early years of mobile telephone integration to the latest smartphones, language classrooms have gone through five stages of instructional technology. When

discussing instructions in the classroom, it is usually the instructor or the teacher we could think of in the first place, in comparison to the administrators or course designers. Also, it is usually the instructor who prepares the lesson plan and arranges teaching into stages, since they are mainly the only staff members who know the learners better in the classroom. The instructors are responsible for making sure that the student learning outcomes are met by the end of the lesson. Likewise, when integrating smartphones into their lessons, instructors are not expected to have mastered all necessary skills at employing these technological tools, but as Aguirre (2014) states, they should show steady improvements and follow the following five steps: 1. Entry: learn new technologies (in this case how could smartphone applications be utilised as learning tools); 2. Adoption: teach vocabulary items with smartphone applications instead of spending time in the classroom on pre-teaching vocabulary; 3. Adaptations: prepare learners outside the classroom for the target language inside the classroom; 4. Appropriation: develop learners' EAP vocabulary knowledge which is a necessity for their pre-sessional as well as major degree courses; and 5. Inventions: teach with images, sounds and other up-to-date features. It might be considered an instructor's responsibility to apply these instructional stages when employing technology in the language classroom, but nevertheless, support from administrators and course designers may also be required from time to time.

1.7. The negative and positive perceptions of smartphone integration in ELT by previous research studies

The use of mobile telephones in the classroom has been a topic for debate for the majority of researchers. Some researchers perceive it as a distraction and believe that it should be banned in the classroom (Bouchard, 2011). For other researchers, these learning tools could be valuable and finding new ways of utilising them in lesson plans (Hartnell-Young & Vetere, 2008, cited in Rinehart, 2012). In the same study, we can learn that while the majority of previous qualitative research studies have explored students' and teachers' attitudes regarding the use of mobile telephones, very few studies have examined the actual use of mobile telephones and how effective they could prove to be for learning content.

By contrast, the present study focuses on a specific component, and the content learning is based on vocabulary development. The qualitative and quantitative analyses will not only report learners' and teachers' perceptions and attitudes towards smartphones (mobile

telephones may no longer be applicable), but their effectiveness in the development and acquisition of the learners' academic vocabulary. Furthermore, the smartphone integration in the present study is quite new and innovative (based on the use of smartphone applications) and will be used to report satisfactory outcomes (based on student and teacher views). Most importantly, smartphone integration in the present study could not be considered destructive of classroom engagement, since the smartphones are used outside the classroom, mainly in preparation for the target language planned inside the classroom. There might be occasions where learners would like to take a quick look at the messages or images sent on the smartphones for a recall, but this can be allowed and monitored where possible. Smartphones in this particular context should be considered as the learner's learning tool or digital notebook in their pocket.

In order to elaborate further on the positive perceptions of smartphone integration in ELT, the majority of previous studies have considered the approach as potentially valuable and effective, and have recommended further research on how best to use it in the classroom instead of banning it. As far as the issue of destruction is concerned, today's students could be considered uniquely and fundamentally different from previous generations, enabling present and future students to allow simultaneous and effective administration of various types of information as they have and will grow up in a world where their cognitive and neurological development has been honed (Brown, 2000; Negroponte, 1995; Prensky, 2001a; 2001b; Veen & Ben Vrakking, 2006, cited in McVaugh, 2012).

Distraction from task may not be caused by smartphones only. There could be numerous other reasons for distracting students in the classroom, such as the appearance of the instructor, the topic making them home-sick, a particular sentence, a joke or a remark that could be reminding them of something or someone, which could take them 'miles away' from the learning environment. Similarly, the focus should not mainly be on how destructive and interrupting smartphones are as a result of ringing and messaging tones, flashing lights and vibrations in the classroom, but the focus should be on how effectively to integrate them into the course curriculum that is driven by "pedagogical rather than technical reasons" (Rismark, Solvberg, Stromme, & Hokstad, 2007, p. 1305, cited in Rinehart, 2012) and that is when positive students' learning activities can take place. It is safe to say that despite their drawbacks in the classroom, smartphones are perceived to be potentially valuable for use in education; it all depends on how best and appropriately they are utilised by the instructor. Even if not included in the course materials, it can be argued from the benefits identified by

research that instructors should be able to integrate smartphones into their daily curriculum with permission from course leaders and take advantage of the latest features, applications, recommending more outside classroom use to learners by recording a video or taking a photograph that they can all discuss in the classroom in order to develop a more authentic task.

1.8. The role of smartphones and smartphone applications in ELT and smartphone apps used in the present study

In recent times, smartphones have become a routine part of both instructors' and students' lives. Contrary to situations in previous years, they are available at reasonable prices with the latest features that not only serve a purpose for communication but also for educational purposes. The feasibility and popularity of these devices opens doors to further research on how best they can be integrated in ELT and to find out if any of the new updated and advanced features has managed to fill gaps in previous research studies and has contributed to knowledge in the field.

The strategy that is implemented in the present study is a technology-based, smartphone-focused strategy used for developing EAP students' vocabulary in a limited period of time. The study primarily relies on smartphones as digital tools and smartphone applications that enable the tool to function. Nearly all of the students enrolled on EAP courses owned smartphones with the ability and possibility to install different applications. The majority of them also had access to the internet, which was the absolute requirement for the present study. There are two types of applications used in the present study. The description of each application and the purpose for which they are used, are outlined in the following sub-sections A and B. Both types of applications are used over a period of 5 weeks each, for a total period of 10 weeks. The study evaluates outcomes on the basis of the importance of human interaction and group or 'community learning' in teaching and learning in comparison to non-human robotic interaction received through installed applications and isolated learning.

A. Installed application for vocabulary learning: IELTS Academic Word List

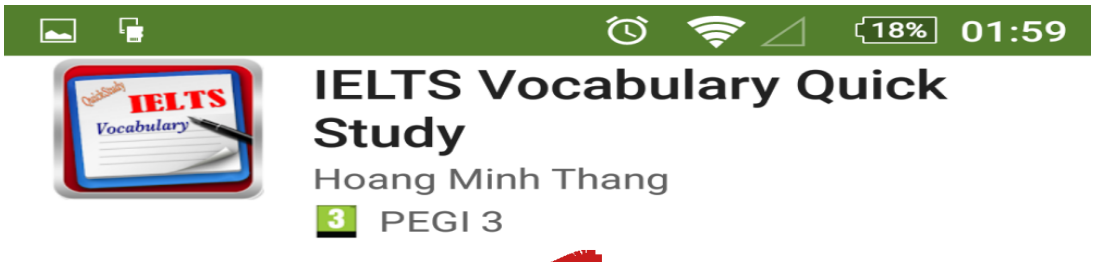


Image 1.4 Installed application incorporated in the present study

The application that is specifically selected for the present study and installed from the Android market, for the purpose of learning or developing vocabulary knowledge, is *IELTS Academic Word List 4000+ words* as seen in Image 1.4. The application includes more than 4,000 academic words, divided between 11 folders or packages, each package containing 20 lessons and each lesson then contains 20 words. The application is used for educational purposes and it is developed by an individual and not an organisation. It is a non-commercial and non-profit app and free to use. It has more than 50,000 downloads. It has received a rating of 4.4 out of 5 stars by 266 users, and the majority of the reviews are positive. The motto of the application is "practice to remember words" and aims at developing learners' International English Language Testing Systems (IELTS), or advanced level academic vocabulary knowledge. Later in the study, other similar apps are also mentioned and discussed in terms of their effectiveness in vocabulary development, such as 'Vocabulary.com', 'BBC Learning English' and 'Phase 6'.

Of the numerous installed applications available on the App store and Google Play store, IELTS AWL was selected for the case during the first five weeks of the present study. The primary reason was the participants' unanimous decision in choosing the application because of their familiarity and previous experience of learning with it. Also, the majority had already had the application installed in their smartphones and were sharing their feedback with other participants, as it was a 'free, easy to install and use app'. However, the application had not been fully explored prior to giving any instructions and very minimum access was taken up by the participants. While only one or two lessons were opened on the application, the participants discussed the thousands of users, good ratings and positive reviews provided by the majority of users. Their initial feedback was generally positive and encouraging enough

for other participants to install the app, and for the researcher to implement it in the study. The application initially chosen by the researcher was similar to the IELTS AWL and was called 'IELTS WordPower'. While there is usually not much difference between such installed applications, the researcher decided to opt for the application that was suggested by the participants, in order to commence a smooth learning experience with a familiar application.

B. Socialising applications: WhatsApp, Viber Telegram and Facebook Messenger

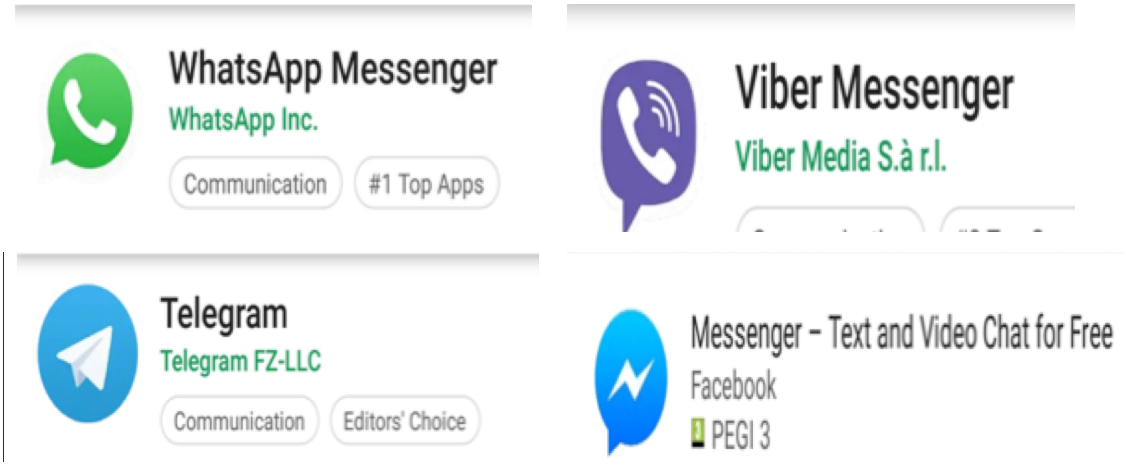


Image 1.5 Socialising applications incorporated in the present study

These four applications displayed in Image 1.5 are used mainly for socialising. The present study, however, aims at finding out if they could also be used effectively for informal teaching and learning outside the classroom, inviting four groups of learners (they learn new words), questioners (able to ask questions related to their learning in the group), answerers (able to answer questions raised by other group members) and participants who actively participate in the group learning (Ogata & Yano, 2004). The participants are not only participating in group learning, but also allowed to ask other group members questions, and provide answers to questions raised by other group members, related to a particular word. There are several similarities between the above applications: the reason that the present study has included all four of them, instead of just one application, is because different learners use different socialising applications. The study will not ask the participants to use all four applications, but to choose to participate through only one application, which they mainly use for socialising, and the one which they are familiar with and feel comfortable using it. It is

also worth mentioning that there are numerous other applications available which are also used for socialising such as Instagram, Snapchat, Wechat, Imo, Hangouts, Linefree, Skype, etc. and if used by the majority of the learners in the group, the latter applications would have also been considered for implementation in the research study. Initially, however, Viber, WhatsApp, Telegram and Facebook messenger applications were employed as the download record is considerably higher than other socialising applications, which indicates their worldwide recognition as socialising applications. Since the features of the applications are similar to a great extent, I will display the functions of each application in a table, showing the similarities and differences between them, instead of copying and pasting identical information (see Table 1.1).

Shared features of the Applications *Source: (Google Play, March 2017)*	**Application**			
	Viber *Overview:(Developer: Viber Media S.a.r.l Luxembourg / 500+ million downloads / 4.3 stars out of 5 by 10,010,698 users)*	**WhatsApp** *Overview:(Developer: WhatsApp Inc. USA / 1+ billion downloads / 4.5 stars out of 5 by 53,001,289*	**Facebook Messenger** *Overview:(Developer: Facebook / 1+ billion downloads / 3.9 stars out of 5 by 40,803,665 users)*	**Telegram** *Overview:(Developer: telegram Messenger LLP/ 200,000,000+ downloads / 4.4. stars out of 5 by 3,593,876*
Instant messages/multimedia messages (includes: sound, image, video and other types of files)	✔	✔	✔	✔
Instant video messages	✔	✔	✔	✔
Free voice and video calls/video chats locally and internationally	✔	✔	✔	✔ voice only
Free to download/install to use through internet connection (Wi-Fi or data plan), no subscription fees to pay	✔	✔	✔	✔
Easy to create and participate in group chats, easily add or remove group members, and block members if they become a nuisance	✔	✔	✔	✔
Add group names and group profile photograph	✔	✔	✔	✔
"Like" other group members' messages or files	✔		✔	
No username and password required, works with telephone numbers and integrates seamlessly with the telephone's existing address book	✔	✔		✔
User name and password required, but telephone numbers are not			✔	
Always logged in, to avoid missing calls or messages	✔	✔	✔	✔

Shared features of the Applications *Source: (Google Play, March 2017)*	**Application**			
	Viber *Overview:(Developer: Viber Media S.a.r.l Luxembourg / 500+ million downloads / 4.3 stars out of 5 by 10,010,698 users)*	**WhatsApp** *Overview:(Developer: WhatsApp Inc. USA / 1+ billion downloads / 4.5 stars out of 5 by 53,001,289*	**Facebook Messenger** *Overview:(Developer: Facebook / 1+ billion downloads / 3.9 stars out of 5 by 40,803,665 users)*	**Telegram** *Overview:(Developer: telegram Messenger LLP/ 200,000,000+ downloads / 4.4. stars out of 5 by 3,593,876*
Application can also be opened on the computer for added convenience of a bigger screen	✔	✔	✔	✔
Message senders can find out if recipients have received, read or seen the messages	✔	✔	✔	✔
Online status update: available, not available, last seen	✔	✔	✔	✔
Hidden chat features; choose to hide specific chats from messaging screen and access them later	✔			
"Damage Control" delete sent messages not only on own device, but remotely on receiver's device as well	✔	✔	✔	✔
Turn off notifications, mute message or call tones, if busy	✔	✔	✔	✔
Received multimedia messages containing photos, sound and videos are automatically saved in mobile handset, using up telephone's memory (this could be considered a possible drawback), unless a different option is selected where media is not saved into the handset	✔	✔		
All photograph messages can be saved in the "media" folder for easy access, instead of scrolling up and down searching for them	✔	✔	✔	✔
Search box enables users quick access to a particular word, can be used as a mini dictionary when searching for the definition or image of a previously sent word		✔	✔	✔
Express yourself with cool stickers and emoji icons	✔	✔	✔	✔

Table 1.1 Shared features of the socialising apps incorporated in the present study

Another important factor to consider when teaching vocabulary items is the retention and recall of the acquired words in the long term. Having learnt and developed their vocabulary knowledge during the 10-week learning period, the present study seeks for a lengthy retention and successful recall of the acquired words after the experimental period. The strategies used will continue to reinforce what they have learnt and make sure it stays fresh in their memories as well as their smartphones. Experimental evidence shows that simultaneous presentation of

a word form and its meaning is best for the first encounter and, thereafter, delayed presentation is best because there is then the possibility of effort leading to successful recall (Nation, 2001). The learners will recall these new words in the longer term, as they will be continuing to study their degree courses that require academic English. Since the use of smartphones and technology is going to be involved in the present study, the participants will also have the opportunity to revise and practice the new words whenever and wherever they can.

In studies by Cunningham and Stanovich (2001) and Nagy and Herman (1985) cited in Dalton and Grisham (2011), direct vocabulary instruction was essential, but research indicates that students with well-developed vocabulary learn many more words indirectly through reading than from instructions. Similarly, in the present study, there are no set instructions or rules for learning or memorising the target words. The participants are provided with the words through multimedia messages and allowed to choose their own approaches for memorisation, practice and revision. Moreover, the use of multimedia in vocabulary teaching is also supported by Chun and Plass (1996) cited in Nation (2001, p.113), where text and picture annotations of "looked-up" words to give better short-term and delayed (2-week) retention than text alone. The amount of incidental vocabulary in their study was quite high compared to other studies that did not use multimedia. Further information regarding the participants' individual learning approaches from the notes recorded in their diaries, and their perception of multimedia integration, will be reported in subsequent chapters.

1.9. Research questions

Every form of research, be it primary or secondary, must have a question that it explores and seeks to answer. A research question is a guide that determines the methodological design as well as the data that the researcher will collect from the entire study.

The central question to guide the current study is formulated as follows:

RQ1. Does providing support for informal vocabulary acquisition and development via smartphone applications influence learning and teaching?

There are five guiding sub-questions that will shape the study, namely:

RQ1.1. How important is vocabulary development for an international student studying in the UK and what previous and present aid is available to them in order to enhance their academic word knowledge?

RQ1.2. How effective has adoption of an inclusive approach by learners to language learning been alongside smartphone-based support?

RQ1.3. What role does the instructor play in appropriately utilising the smartphone for both in- and out-of-class-learning?

RQ1.4. What are students' perceptions of informal learning using smartphone applications that influence more formal aspects of the programme such as classroom practice?

RQ1.5. How does the social aspect of language learning influence vocabulary development and affect learners' perceptions of installed applications in comparison to socialising applications?

The present study employs a formal structure with which to focus on the research questions. The PICOC model (Petticrew & Roberts, 2006, cited in Booth, Papaioannou & Sutton, 2012) is used for defining the scope and includes the following components: population, intervention, comparison, outcomes and context. After applying each component to the present study, the following information was obtained:

- Population: Adult, male and female pre-sessional course EFL students preparing for Bachelor's and Master's courses at university with limited academic vocabulary knowledge
- Intervention: Academic vocabulary development with smartphone applications
- Comparison: Academic vocabulary development without the intervention of smartphone applications
- Outcomes: Enhanced and developed academic vocabulary knowledge resulting in producing tutor-assessed academic assignments at the end of the pre-sessional course
- Context: 10-week, pre-sessional Summer course at a university in Britain

In order to answer these questions with evidence, the study opted for a case-study approach and instead of relying on secondary sources, the data were collected by the researcher as primary sources. The evidence provided in the present study might not lead to conclusions that can be generalised, but collecting evidence from interviews, questionnaires, diaries, and

the researcher's logbook as well as the pre- and post-tests (for both types of applications), each piece of evidence corroborating and complementing the other will seek to support the evidence in this case in a powerful way as described by Thomas (2013). Further details regarding data collection and the multi-method approach or triangulation (Bell, 1999; Thomas, 2013) to support the present study are provided in chapter 3 (Methodology).

1.10. Conclusion

The pervasiveness of smartphones in the 21st century is well-accepted and well-known by language teachers. It should be clearly understood how readily-available and feasible tools can be integrated in a language classroom as well as integrating asynchronous learning outside the classroom. With regard to teaching vocabulary and word learning strategies, it is important to promote learners' interests in the words (images in the present study) alongside meeting curriculum needs (developing the EAP language), which is considered as an important and priority area in a university context. The present study will seek to gain evidence to encourage teachers to apply the aforementioned teaching strategies in new ways using new and modern and ubiquitous tools such as smartphones. With successful and effective outcomes from the present study, this may encourage other language teachers to try the strategies used in the present study, to adapt to their particular teaching contexts.

While the present study lessens the learning burden for the learners and requires the instructors to spend additional time (especially initially) outside the classroom on preparation and assigning the learning, learners are equally responsible for their learning. The approach by no means involves "spoon feeding" the learners while teachers 'burn themselves out', when they could have just provided the learners with a list of 400 words to learn using individual learning approaches. But, preparing and sending words on a daily basis requires equal cooperation from both teachers and learners in the development of EAP vocabulary in an informal, modern and potentially interesting way through a sensible utilisation of smartphones.

Chapter two: Literature Review

2.1. Introduction

Any doctoral research has the central objective of contributing to academic literature. This implies that doctoral research has to be based on a substantive and sound literature foundation. A literature review identifies how the project will inherently contribute to the literature under the area of knowledge or study. The sections following outline some of the consulted literature. The exploration began by documenting the strategy and approach of searching and collecting the literature, including the search terms, operators and the consulted literature. After reporting methods for reviewing the current literature in section 2.2, section 2.3 reviews the role of a teacher in supporting language learning. Section 2.4 reviews literature on social aspects of language learning, while section 2.5 reviews previous research on the adoption of an inclusive approach to language learning. Section 2.6 reviews literature on the integration of technology in ELT in general with a specific focus on MALL. The general overview of the research on MALL, including major studies in the areas, scholars positively supporting the technology, those refuting it as an opportunity, the evidence deficiency (gap) and how the current study relates to this area of knowledge can be read in section 2.6.1. The same strategy was adopted for identifying major studies, those supporting the area of knowledge and the rebuttals in the area in section 2.6.2 when discussing studies about "previous research on technology integration in ELT (mobile telephones and other handheld devices)". Section 2.6.3 of the review focuses on the most recent research on technology integration in ELT and learning, those in support and rebutting the possibilities, identified and organised in a tabular form. The next section of the literature review (section 2.7) is how EAP is vital in academic vocabulary development, identifying the major research in the area, supporting evidence and refuting claims as well as how the current study contributes to knowledge. Implications of the study are reported in section 2.8. In assessing and evaluating the sources, gaps in evidence have been combined in the conclusion (section 2.9) to recommend what and how the study seeks to contribute to present knowledge and exploration of MALL and its effectiveness in English language vocabulary development for L2 or EFL learners.

2.2. Methods for reviewing the current literature

The topics reviewed in the literature of the present study are primarily based on teaching and learning with technology: the integration of mobile telephones and other similar portable devices. The focus of the study is specifically on 'Mobile telephone messaging and vocabulary development: How learners can integrate an extended tutorial backchannel into daily activity when learning English as a Foreign Language'. The terms "teaching" and "learning" are used interchangeably and simultaneously as the study reflects on both the teachers' and the learners' perspectives. As well as messaging, the present study also pays attention to the teaching and learning of vocabulary with smartphone applications (apps).

When selecting papers and sources for reviewing, the search option was narrowed to *"mobile assisted language learning"* and *"vocabulary"*. The search for the sources relevant to the topics are summarised in Table 2.2.

Database	**Number of sources (N)**
OneSearch Library Website	53
The Open University	9
DeepDyve Online Peer-reviewed Journals	15
English Language Teaching Journal	3
Arab World English Journal	2
Scopus	2
Google Scholar	11
The Guardian	1
TESL e-journals	2
Procedia	10
Scribd	2

Database	Number of sources (N)
ProQuest	13
Books and Printed Materials from Lancaster University Library and University of South Wales Library	52

Table 2.2 Names of databases used for searching sources

The websites and other similar resources listed in Table 2.2 offered numerous peer-reviewed journal articles in the field of MALL. When selecting papers for the literature review, the researcher bore in mind the reasons for selecting the papers, their relevance to the study being conducted, and the order in which these sources would be prioritised and discussed critically. This section presents a written discussion that draws on previous investigations, contributing to the process of wider learning and supporting reasoned organisation and evaluation, as stated by Finn (2005). It compares (similarities and differences) of results and conclusions by different authors (as suggested by Bell, 1999) as well as a reassessment of results in the light of new information that might not have been available to the original authors (Finn, 2005). The comparison of similarities and differences is important, because similar findings "tie together underlying similarities in phenomena not normally associated with each other" whereas differences "force the researcher into a more creative frame-breaking mode of thinking" as stated by Eisenhardt (1989, cited by Meyer, 2001, p.343).

In addition, a search for peer-reviewed articles in journals was performed through the use of words and phrases related to 'EAP vocabulary development', 'vocabulary development with smartphones', 'SMS and text-messaging for vocabulary development', and 'use of smartphone apps for vocabulary development'. Further searches were performed using the Boolean operators, again with a combination of words and phrases such as 'vocabulary development with smartphones OR mobile phones', 'SMS AND messaging in vocabulary development', and 'M-learning NOT E-learning'. The materials selected for review showed awareness about recent developments, challenges and debates in MALL. To further enhance reliability, manual searches were also carried out in key journals, including the ELT Journal, English Teaching Professional, Computer Assisted Language Learning Journal, Computers and Education, Journal of Computer Assisted Learning, ReCALL, Modern English Teacher,

and Language Learning and Technology. Details of the sources selected from the aforementioned key journals are stated in the reference section of this study.

Most of the journals were searched online by consulting "journals on technology in education" or "mobile assisted technology in English language teaching". To gain an in-depth view of the topic, digging deep into the history of the area of study was necessary with the search confined to 1994 onwards. Hence, those studies published before 1994 were not included much. The search began with a "basic search" that provided many results and was then confined to an "advanced search" customised to date and full-text. Screening was done to identify only those studies that had discussed the area of study deeply, if they were full-texts and objective in their discussion and exploration of the research area. For journals, peer-reviewed articles or sources were preferred. Screening and filtering was done by looking at the abstracts to ascertain whether the studies explored assisted technology and not assistive technologies in learning, further confined to language learning. All had to be based on empirical investigation, both qualitative and quantitative, so long as the results were presented clearly. But for the quantitative studies, the search ensured that the search had provided sample size calculation effect to ascertain the reliability and validity of the research. A total of 600 articles were identified from the search and after filtering and screening, the selection identified between 130 and 150 articles.

For each area of knowledge, different search terms were used. For, instance in the *General overview of research on Mobile Assisted Learning* the search terms used included "MALL as an opportunity in language learning", "Disadvantages of MALL" and "Necessary improvements for MALL." The second area of research was *Previous research on Technology Integration in ELT* and search terms used included "Technology integration in English Language Teaching", "Mobile phones and handheld devices in learning", "Efficiency of technology integration in ELT" and "Challenges of technology integration in ELT". For the third section, *Most recent research on technology integration in ELT,* search terms used were "Recent technologies in ELT", "Smartphones and language teaching", "Messaging and language teaching" and "Apps and language teaching or ESL teaching". The main areas that were covered in the literature and their relevance to the research questions is shown in Figure 2.1.

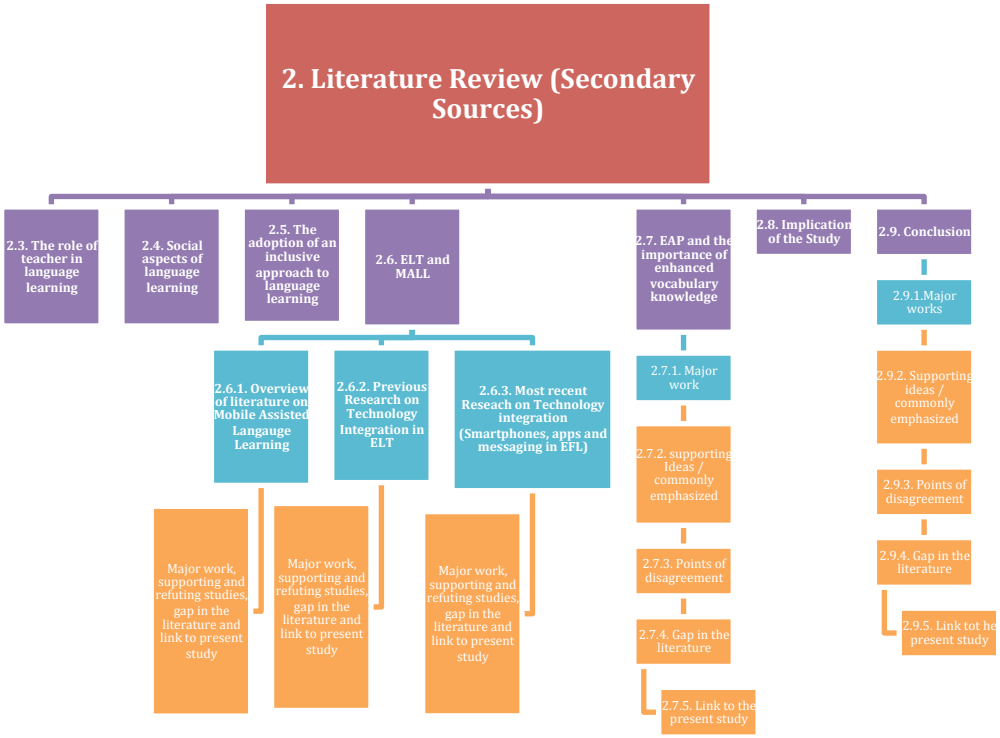


Figure 2.1 Review of literature based on major concepts in technology integration in ELT

The current research seeks to contribute to technology integration into learning, especially how assisted technology helps in language teaching and learning. This follows the premise that academic researchers are part of a wider academia exploring how technology can be used in enhancing learning, especially second language teaching. For this, the current research is likely to be published in journals like the British Journal of Education and Technology, Educational Technology & Society, the International Journal of Mobile and Blended Learning as well as all conferences on second language learning, mobile assisted language learning and technology and education. This research is concerned with research and knowledge about the teacher's role in language learning, social aspects of language learning, and the adoption of inclusive approaches as well as technology in education or learning. A *General overview of research on Mobile Assisted Learning, Previous research on technology integration in ELT* and *Most recent research on technology integration in ELT* and to conclude, *Why is it important to develop students' EAP words* were identified as specific areas of knowledge to consider.

First, a *General overview of research on Mobile Assisted Learning* as an area of research is a termed coined from the literature as well as self-generated (Godwin-Jones, 2011). This study seeks to contribute to the area of study by providing research results on mobile assisted learning and confines the exploration to language learning, especially English language

learning for foreign or second language learners. It sets to provide an insight on how teachers can be included in the design and implementation of mobile assisted technology for English language learning.

Second, *Technology integration in ELT* is a self-generated term, while MALL arises from the conceptualisation of the current literature on technology used in language teaching (Godwin-Jones, 2011). The area of literature lays the foundation on how technology has been applied in language teaching, especially English, whether it has been successful and some of the challenges with its implementation. The research study sets out to explain how teachers can be involved in the design of these technologies to provide benefits in knowledge retention on vocabulary and its success in achieving academic excellence with regards to MALL implementation on ESL teaching.

Third, *Most recent research on technology integration in ELT* is coined from the literature, but specifically concerns how this study will provide evidence on the extent to which technology has been integrated into language teaching, especially in areas such as why and whether including teachers into the design of these technologies will improve learning outcomes.

Finally, vocabulary instruction has been an area of interest for many researchers for many decades. The earliest study found and reported in the literature review that comes from a well-respected and cited name in vocabulary learning and teaching is Paul Nation. Nation's (1982) research shows the basic techniques in vocabulary teaching and assists learners to take their first steps in learning a large vocabulary. Later on, Nation also suggested that words should be treated as part of a system as well as paying attention to the underlying concept of formally related words (Nation, 2002). In relation to the present study, the focus is on EAP words, which is a requirement for learners who intend to study at a university or another higher education institute and that vocabulary can be found in the University Word List (Nation, 1990).

2.3. The role of a teacher in supporting language learning

In education, language classrooms are probably one of the most interactive, dynamic and 'fun' classrooms to study in. This is primarily because learners usually come from different linguistic and cultural backgrounds and in most non-homogenous classrooms, adult learners are willing to share previous learning experiences and proudly discuss how education takes

place in their home countries. All of this happens in the presence of a language teacher. The term "teacher" does not refer to "teaching" and educating only. They not only instruct and teach the language, but they introduce the language in the classroom, suggest practice and revision methods and consolidate different learning approaches. As a result, most of the research conducted in the past two decades perceives language teachers as mentors, advisors, facilitators and encouragers of learner autonomy, which is the most crucial aspect of independent language development, outside the classroom. Obviously it is important that the teachers are qualified and trained to teach in their subjects, but when it comes to their interaction with the students, they are usually required to shift their approach and reorient themselves at advising (Kelly, 1996 cited in Morrison & Navarro, 2012). Just like qualifications and professional training are requirements for language teaching, the shift from teaching to advising also requires professional development training to support the role (Hafner & Young, 2007 cited in Morrison & Navarro, 2012). To reiterate, teachers require continuous support at becoming professional advisors and mentors, since they are involved with culturally and linguistically diverse students and their learning needs.

Similarly, in a study by Ehrman (1998), when asked to evaluate the instructions at the end of an intensive foreign language training, the adult students' comments praised their teachers' professionalism and dedication more than the textbooks and the curriculum. The departing students' comments included many positive aspects about their teachers, such as spending additional time on guidance and counselling, taking a personal interest in each student, allowing the students to learn in their own way, creating a community-like ambience to learn in, bringing humour into the classroom as well as promoting and encouraging students' creativity. To these students, their success lay in their relationship with their teachers. In his earlier study, Ehrman (1996) claims that teachers' roles in language classrooms not only lie in unconditional regard and empathy, but teachers should also match their teaching approaches to students' learning approaches in order to create flexibility and learner autonomy. He further argues that teachers' motivation is as important as that of the students, which is usually gained by interpersonal satisfaction of teaching and task accomplishments.

In order to elaborate further on learner autonomy in a language classroom, teachers certainly play an important role in supporting their learners to become autonomous and become owners of their learning (Ruelens, 2019). Ruelens further claims that autonomy should be defined, identified and measured by educators, if aiming to optimally support the advancement of learner autonomy. Since the present study also focuses on adult EFL university level students,

it can be argued safely that flexibility, adaptation, self-initiative and self-direction should be the outcomes at a university level, undertaken by learner autonomy (Bajrami, 2015). Likewise, learners' senses of autonomy might be positively affected by seeking assistance from their tutors or lecturers (Ruelens, 2019) and not only to become totally independent of the teacher, of the learners and of approved curricula (Little, 1995). In the same study, Little states that teachers play a crucial role in establishing learner autonomy by providing the learners with appropriate tools and with opportunities to practice the tools. In other words, it is inevitable that the teachers and learners are co-producers of classroom language lessons and if teachers want to promote learner autonomy, they should bring learners to the point where they accept equal responsibility for this co-production (Allwright, 1991 cited in Little, 1995). In sum, learner autonomy cannot take place without the teacher's initial scaffolding and teachers play a major role in consolidating the autonomy of learners.

2.4. Social aspects of language learning

Language learners live in a networked society (where digital information and communication technologies are used) and my experience indicates that the majority of them have access to online communities through social media. Numerous platforms have been created during the past decade (such as Facebook, Instagram, Snapchat, WhatsApp, Viber, Telegram, etc.) that are mainly used for socialising by native English speakers and can be used for learning alongside socialising by some non-native English speakers (especially when the language of the application is English). Having become central to individuals' lives, social media has enabled those individuals to access information, share experiences by interacting with communities and most importantly, learn (Gomes Junior, 2020). This same article explores how an online community on Instagram, where members' connections are through sharing narratives, stories, memories and other accounts of foreign language learning, can be a learning network. His analysis reveals that, as proposed by Downes (2012 cited in Gomes Junior, 2020), autonomy, diversity, openness and interactivity are the network principles that match the community approaches. Gomes Junior also asserts that "knowledge is available in the world and it emerges from connecting and interactions with humans and non-human appliances" (p:2).

Similarly, the theory of connectivism focuses on an understanding of learning in contemporary times; the theory conceives knowledge as constructed via the establishment of

connections and networks (Siemens, 2005 cited in Gomes Junior, 2020). In addition, Downes (2010 cited in Gomes Junior, 2020) believes that connectivism provides insight into how people learn and what they are able to do in order to learn. Thus, knowledge is dynamic, chaotic and distributed, neither confined to an entity, nor to a specific place, and emerges from connections with people, communities and technologies. Gomes Junior concludes by stating that in a language classroom, teaching can go beyond lecturing and instructing, by orienting and encouraging learners to connect with networks as well as interact with and within their physical and virtual worlds, in order to meet the real needs of the students of a networked society.

In another study by Sinatra et al. (2020), the performance of a virtual pedagogical agent is praised; this is a simulated character that interacts socially with the user to facilitate learning. During the learning process, the agent may play the role of a coach, a teacher, a peer or a student. In a computerised environment, such simulated social characters are important in the learning context, as they are shown to affect learning outcomes and learning-related behaviours. Positive effects on learning outcomes have been observed in terms of personalised language, slang, enthusiasm, politeness, feedback, social memory, attention, interactivity, personality and inclusion of non-beat gestures. Virtual agents, according to Sinatra et al., that replicate common behaviours of successful human teachers, have been shown to improve learning outcomes. To conclude, language is shown in these studies to be learnt better by interacting and building networks. This can be done in the classroom and online through a social network. Learning is never solitary in this case, and it is the psychological interaction that subsequently drives developmental and experiential learning, which is the internalised version of social interaction (Little, 1995).

2.5. The adoption of an inclusive approach to language learning

Most of us are probably familiar with the two common approaches used in education; traditional or structural; and what is regarded as modern teaching and learning approaches. Another approach that is commonly used is the inclusive approach. Heacademy.ac.uk (2019) believes that: “Inclusive learning and teaching recognises all student’s entitlement to a learning experience that respects diversity, enables participation, removes barriers and anticipates and considers a variety of learning needs and preferences” (p;3). It is necessary, therefore, to discuss inclusive approaches and what impact they might have on the present

study. A range of educators around the world have looked to support learners' individual learning approaches within the same classroom, and have also promoted and embraced professional development training in order to understand different learning approaches and how to cater for them individually, if possible. Since there is no single agreement about this concept, training and development sessions aim at familiarising educators with different options for delivering their lessons according to different ways for learning.

Individual learning approaches include but are not limited to: visual, aural and kinaesthetic. Researchers in a study by Costa et al. (2020) studied different approaches to learning and sought to learn about each student's individual approaches, and subsequently, how to support the development of effective pedagogical actions. These researchers believe that each learner develops a particular way of learning and educators should be aware of this in order to diversify their teaching as well as familiarise themselves with different learning approaches. More specifically, learning approaches may revolve around a serious of distinct behaviours which can be defined as cognitive, affective, or physiological traits used for how students perceive, interact with and respond to their learning environments, a personal way to process information, feelings and behaviours in learning situations (Alonso, Gallego, & Honey, 2002; Keefe, 1979; Kolb, 1984 cited in Costa et al., 2020). Having a sound knowledge of learning approaches will assist educators in appropriately planning the delivery of education in order to facilitate students' learning both inside the classroom and outside the classroom as well as through distance education. Not only is the facilitating of individually preferred learning approaches important, but various learner attributes such as personality traits, motivation or language aptitude are key reasons why some language learners may do better with minimum effort, while other language learners fail. Psychology has traditionally named these attributes as "individual differences" (Dornyei, 2005). Ideally, the teacher may begin by exposing the learners to diverse learning strategies and allowing them to opt for the approach that best suits them (Bajrami, 2015).

Another study that corroborates the above argument is by Pashlar et al. (2008). They suggest that individual learning approaches need to be identified first, so instruction may be tailored accordingly, by asking learners to evaluate what sort of information presentation they prefer (pictures or speech) and/or what type of mental activity they find most engaging (listening versus analysis, for example). The study further informs that the education field in all sectors and ages is thriving in publishing materials and

professionally developing educators to support different learning approaches and the adoption of an inclusive approach to learning.

2.6. ELT and MALL

2.6.1. An overview of the literature on mobile assisted language learning

2.6.1.1. Major studies on mobile assisted language learning

The term "mobile assisted" should not be confused with "mobile assistive" language learning, where the latter refers to "any piece of equipment, device, computer programme etc., which assists a learner with special needs to access teaching material or any other learning resource" (Gutteridge & Taylor, 2003). The literature on MALL has prominently opened new directions in CALL, where users have more flexibility in learning in terms of access and portability that did not exist in non-mobile CALL (Ballance, 2012). MALL, according to Kukulska-Hulme (2006), through a quantitative survey design, has the potential of providing learners with "rich, real-time, convenient, collaborative, contextual and continuous learning both formally within schools and informally outside schools". A term used quite often in MALL is m-learning (Chinnery, 2006; Soloway et al., 2001). M-learning has offered a novel learning mode whereby learning takes place with the assistance of portable electronic tools, requiring special properties and internet connection (Stone, 2004). M-learning also features "mobility, ubiquity, immediacy, flexibility, connectivity, convenience, user-friendliness, and low cost" (Jones & Jo, 2004). It is affordable and available to a greater number of people. Besides, it is becoming a part of many users' real life experiences and offering episodic as well as extended learning over time because of its availability (Pegrum, 2014). Likewise, m-learning is "personalised, spontaneous, informal and ubiquitous" (Miangah & Nezarat, 2012).

M-learning can be considered as micro learning through mobile devices that can be used anytime and anywhere (Fotouhi-Ghazvini, Earnshaw & Haji-Esmaeili, 2009) and a subset of e-learning, educational technology and distance education (Yan & Liping, 2013). Ushioda (2013) further confirms that through a qualitative interview design study that individualisation and flexibility of m-learning also provide "autonomy, flexibility, freedom and choice" which subsequently turns language learning into "an engaging, interactive and learner controlled process", where learners focus on their own language needs and learn at their own pace. In addition, m-learning promotes autonomy, which is considered a substantial factor in language

learning. According to Godwin-Jones (2011), it supports and makes learners responsible for their own learning; m-learning could engage learners in autonomous learning. M-learning, according to Suleimani et al. (2014), is contrary to fixed learning at predetermined locations. It is further supported for its interactive type of technology-based learning where learners have the ability to learn interesting and useful activities by being actively involved through collaboration via portable learning devices.

The most popular device, widely used and found more convenient compared to other devices in MALL, is the smartphone. The computer capability and internet connectivity of a smartphone is more advanced than a regular mobile telephone with a built-in mobile operating system with added functionality of portable media players, and web browsers that are able to display web pages through a high resolution touch screen (Wu, 2014). Similarly, Godwin-Jones (2011) supports the idea of app-based MALL activities, given the recent technological advances that also exploit touch-screen technology and designed to be used in the situations MALL has introduced. Because of the availability of the internet and personal contents, smartphones have enabled anytime and anywhere learning (Cavus & Ibrahim, 2009; Kukulska-Hulme, & Shield, 2008; Fotouhi-Ghazvini, Earnshaw & Haji-Esmaeili, 2009) without being confined to inflexible teaching practice (Ushioda, 2013), that is location independent (Fotouhi-Ghazvini, Earnshaw & Haji-Esmaeili, 2009), offering a solution to language learning barriers in terms of time and place (Miangah & Nezarat, 2012), formal learning inside the classroom and informal learning outside the classroom (Kukulska-Hulme, 2009) OR the ability to learn BOTH formally and informally inside and outside the classroom (Looi et al., 2010). Table 2.3 offers a summary of major studies on mobile assisted language learning.

Summary of major studies on mobile assisted language learning	
Balance (2012)	Mobile Assisted language Learning (MALL) allows more flexibility than Computer Assisted Language Learning (CALL)
Kukulska-Hulme (2006)	MALL has the potential of providing learners with "rich, real-time, convenient, collaborative, contextual and continuous learning both formally within schools and informally outside schools
Gutteridge and Taylor (2003)	Differentiates "Mobile Assisted" and "Mobile Assistive" terms
Chinnery (2006) and Soloway et al.	Defines and discusses M-Learning

Summary of major studies on mobile assisted language learning	
(2001)	
Stone (2004)	M-learning requires Internet connection
Jones and Jo (2004)	M-learning features: "mobility, ubiquity, immediacy, flexibility, connectivity, convenience, user-friendliness, and low cost"
Pegrum (2014)	M-learning provides extended learning over time because of its availability
Miangah and Nezarat (2012)	M-learning is "personalised, spontaneous, informal and ubiquitous"
Fotouhi-Ghazvini, Earnshaw and Haji-Esmaeili (2009)	M-learning: micro learning through mobile devices that can be used anytime and anywhere
Looi et al. (2010)	MALL: presents the ability to learn BOTH formally and informally inside and outside the classroom
Yan and Liping (2013)	M-learning: a subset of e-learning, educational technology and distance education
Godwin-Jones (2011)	Supports the idea of app-based MALL (touchscreen advances)
Wu (2014)	The computer capability and internet connectivity of a smartphone is more advanced than a regular phone with a built-in mobile operating system

Table 2.3 Summary of major studies on mobile assisted language learning

2.6.1.2. Research supporting mobile assisted language learning

Previous studies conducted on the use of smartphones in language learning have reported effective techniques and their contribution to the development of reading (e.g. Lin, 2014; Hsu, Hwang, & Chang, 2013; McClanahan, Williams, Kennedy, & Tate, 2012; Brenneman et al., 2007), speaking and listening (e.g. Liu & Chu, 2010; Azar & Nasiri, 2014; Demouy & Kakulska-Hulme, 2010), writing (e.g. Li & Hegelheimer, 2013), vocabulary (e.g. Lu, 2008; Stockwell, 2010; Thornton & Houser, 2005; Wu, 2014; Wang & Shih, 2015), enhanced pronunciation (e.g. Gasparini & Culen, 2012; Godwin-Jones, 2008), and learning motivation or positive attitudes that subsequently result in accepting challenges, being curious, being in control, cooperation, competition, recognition, as well as developing both intrinsic and extrinsic motivations (e.g. Ciampa, 2014; Yang, 2012; Wang & Shih, 2015; Lu, 2008; Liu &

Chu, 2010; Nekata, 2008 cited by Macaro, Hendley & Walter, 2012). Some mobile devices offer certain applications, especially multimedia functions for speaking and listening, which enable students to download dictionaries, fitted with sound functions, allowing students to learn correct pronunciation of the languages they are not familiar with (Jiang, 2014; Li, 2010, cited by Macaro, Hendley & Walter, 2012). From the literature research evidence, it can be inferred that the use of mobile telephone technology in language learning has the potential of improving the learning outcomes of L2 learners (Abdous et al., 2015).

With regard to learning particular language skills through mobile telephone technology, Nourdin and Quintana (2015) refer to the contribution that MALL has made in improving listening comprehension for L2 learning as second generation mobile devices are fitted with multimedia systems and applications that help students to improve their listening skills. This is confirmed in a study by Azar and Nasiri (2014), where the experimental group, provided with cellphone-based audio books for their listening comprehension, outperformed the control group that did not receive instruction through the cellphone. Portet et al. (2015) refer to the contribution that mobile telephone technology has had in improving the grammar of L2 learners. The implication is that mobile devices have pre-installed programs (also used in the present study) that teach students grammatical rules in addition to the multi-choice activities that enable learners to choose correct answers from numerous alternatives (Delikostidis et al., 2013). Moreover, the mobile devices have some grammatical explanations that learners can access through vocal services or short messages, so MALL has prospects for improving the grammatical capabilities of learners (Lord & Harrington, 2013).

In the present study, the focus is mainly on vocabulary development through smartphones. As mentioned in the 'Introduction' chapter and illustrated through a living room model, the knowledge of vocabulary may not be acquired for the purpose of using it on its own. On the contrary, a range of vocabulary knowledge is a requirement in all four skills (reading, writing, listening, speaking). For instance, Anderson and Freebody (1983 cited by Al-momani, Hamat & Hussin, 2014) emphasise the importance of vocabulary knowledge in reading comprehension and believe that in order to be an effective reader, one must have a wider vocabulary as there is a bidirectional relationship between comprehension and vocabulary. This is particularly important when assessing the idea of whether smartphones can be used as educational tools in non-educational settings; the integration of smartphones into our lives has become an integral part of our daily activities. In this context, the present study could encourage learners to see mobile telephones as "learning tools in pockets" (Kiernan &

Aizawa, 2004) as well as establishing learning not just through thinking but interacting and negotiating with others (Achilleos & Jarvis, 2013).

With regard to vocabulary development of the participants, in their study, Fitzpatrick, Al-Qarni and Meara (2008) investigated the behaviour of an individual subject in vocabulary learning tasks and whether a single subject can learn a relatively large vocabulary in a short space of time. The subject in their study was required to learn 15 new words per day over a period of 20 days (300 words). They were interested to find out whether performance drops if large quantities of input are maintained over an extended time period. Their initial expectation in the study had been that the cumulative effect of learning a new set of words would eventually cause performance to drop off, but no evidence of this was found in their study. The subject had no difficulty in acquiring almost all of the 300 words, which she was required to learn. However, there were differences in the number of words recognised in the tests conducted by the researchers. The results of the study suggest that learning 15 words per day is not a significant load and learning had been more successful than initially expected. However, the participant's performance seemed to get worse as the study progressed. This could reinforce the researchers' point about the danger of relying on a small number of test events and assuming that they provide a definitive picture of what will happen in the longer term. Recommendations were made that further studies of this sort need to be carried out over longer time periods and should require the subject to learn more words. In the present study, the number of target words is 400, but over a period of 10 weeks. If the participant in the Fitzpatrick, Al-Qarni and Meara's study managed to cope with 15 words per day with successful learning, it is anticipated that the participants in the present study should not feel burdened by receiving 5 to 6 words per day on their smartphones.

As far as learning with smartphones is concerned, Delikostidis et al. (2013) state that the invention of mobile telephones was not just a breakthrough in communication, but has since changed the education sector. Apart from benefitting daily lives, mobile telephones have become instrumental in language learning as learners and teachers are now becoming used to the e-learning environment where education is made accessible in many ways. Nonetheless, Fisher et al. (2012) attribute the increased importance or focus of the mobile telephone technologies to the introduction of the internet that has made it possible to engage in open and distance learning on a worldwide scale. On the other hand, the impressiveness of long distance learning made the world realise the role that various mobile devices can play as effective resources for the education sector (Delikostidis et al., 2013). Parmelee (2014) posits

that as mobile technology is developing at an impressive rate, it offers greater opportunity for teachers as well as students of EFL learning to practise the language anywhere, anytime. Nonetheless, the ease of portability implies that mobile technology can expand the learning opportunities for learners and instructors of EFL alike. Evidence indicates that mobile telephone technology in EFL learning improves learning, especially when fitted with user-created content to enhance the participation of users.

The impact or influence of technology in the learning environment is quite evident from the manner in which it has transformed learning in modern classroom settings. One example is how language classrooms have already embraced a 'Flipped classroom' where students study language and content input at home and use the lesson time for practicing exercises usually done for homework, in the classroom (Nanna, 2014; Hanington & Kwah, 2014). Similarly, the use of "YouTube" (Keddie, 2015), "online Skype teaching" (Stannard, 2015; Gabay, 2014; Kozar, 2013; Kamont, 2014), the use of "wiki" (Dry & Reva, 2014; Wong, Chen & Jan, 2012), "presentations" containing images and other non-textual items (Jabr, 2015; Fullagar, 2013; Gkonou, 2013), use of "cameras for photos and voice recordings" (Cherkas, 2012; Warwick, 2012), the use of "cameras for video recording" (Gromik, 2012), "Google images" with comic strips (Coughlan, 2015), online or mobile "translation apps" (Groves, 2015), incorporating "films and movies" with annotations and subtitles (Jannuzi, 2015; Bradley, 2015; Porcel, 2009), customised teaching "applications" installed on smartphones (McClure-Smith, 2012), the use of technologically enhanced games and game apps with motivational characteristics that can be a powerful source of learner autonomy (Ahmad, Mubin & Escudero, 2015; Almerekhi, Erradi, & Nahia, 2013; Fotouhi-Ghazvini, Earnshaw & Haji-Esmaeili, 2009) and strongly pertinent to the present study, the use of "electronic flashcards" (Chase & Kiourtzidis, 2013), are all examples of modern-day teaching and learning with technology.

In relation to the present study, Coughlan (2015) believes that, 'love them or loathe them', mobile digital devices are here to stay. He reports that mobile subscribers have grown from 286 million to nearly a billion between 2010 and 2014 and as a result, the use of smartphone technology is on the increase. On the other hand, smartphone technology has changed how some teachers design and deliver learning experiences and play a significant role in designing instructions for their classrooms. The technologically-enhanced instruction design could also encourage students to not have to use a traditional approach of learning L2 in the classroom context (Petersen et al., 2013).

In a study by Kargozari and Zarinkamar (2014), there is a very strong support for the integration of technology in ELT. The literature in their study has indicated how to make traditional teaching approaches somehow obsolete ("traditional teaching methods are moving backwards and the new technology methods are stepping forward" (O'Brayan & Hegelheimen, 2007). Although the methodologies in the present study also support technology and the effectiveness of smartphone applications, nevertheless, the methodology is appropriate enough to address the non-technologically-enhanced learning of English language as well. The post-tests will reveal whether technology is an absolute necessity in the learning of a language in general and the development of vocabulary in particular. The participants' responses to the interviews and diaries at the end of the study will show if they have used any non-technological approaches for developing their vocabulary. The participants will be asked whether traditional learning methods should really be pushed backwards, or whether there is a need to explore alternative learning approaches for students who have limited access to technology and rely on traditional methods. Table 2.4 offers a summary of research supporting mobile assisted language learning.

Summary of research supporting mobile assisted language learning	
Kargozari and Zarinkamar (2014	Strong support for the integration of technology in ELT
O'Brayan and Hegelheimen (2007)	New technology in learning is more forward-oriented
Coughlan (2015)	Digital mobile devices will stay
Ahmad, Mubin and Escudero (2015); Almerekhi, Erradi, and Nahia, (2013); Fotouhi-Ghazvini, Earnshaw and Haji-Esmaeili, 2009	The use of technologically enhanced games and game apps with motivational characteristics that can be a powerful source of learner autonomy
Delikostidis et al. (2013)	The invention of the mobile phones was not just a breakthrough in communication but has since changed the education sector.
Fisher et al. (2012)	The internet has increased the focus of technology in the educational sector
Parmelee (2014)	Mobile technology is developing at an impressive rate, it offers greater opportunity for teachers as well as students of EFL learning the opportunity for

Summary of research supporting mobile assisted language learning	
	practising the language anywhere
Al-Qarni and Meara (2008)	MALL increases language vocabulary retention
Lin, (2014); Hsu, Hwang, and Chang (2013); McClanahan, Williams, Kennedy, and Tate (2012); Brenneman et al. (2007)	Smartphones improve language learning through reading
Liu and Chu (2010); Azar and Nasiri (2014); Demouy and Kakulska-Hulme, (2010)	Smartphones improve language learning through speaking and listening
Li and Hegelheimer (2013)	Smartphones improve language learning through writing
Lu (2008); Stockwell, 2010; Thornton and Houser, 2005; Wu, 2014; Wang and Shih, 2015	Smartphones improve language learning through vocabulary development
Gasparini and Culen (2012); Godwin-Jones (2008)	Smartphones lead to enhanced pronunciation
Ciampa, 2014; Yang, 2012; Wang and Shih, 2015) and (Lu, 2008; Liu & Chu, 2010; Nekata, 2008) cited by Macaro, Hendley and Walter, 2012	Smartphones improve: learning motivation or positive attitudes

Table 2.4 Summary of research supporting mobile assisted language learning

2.6.1.3. Research critiquing mobile assisted language learning

In a study by Chun, Smith and Kern (2016), the use of technology in language classrooms was seen to put pressure on educators and teachers to use technology for preparing learners in a technologically enhanced world, especially when the use of technology in the classroom differs from the technology outside the classroom (in the real world). In terms of language learning itself, technology was having negative effects, displaying non-standard forms in an artificial learning environment. It can be said that in the most technologically advanced environments, the most effective learning is not guaranteed from these sophisticated tools. Despite its ubiquity, portability, flexibility and popularity in language learning, there are

related challenges; for example: reduced screen sizes; limited presentation of graphics; virtual keyboarding; and limited power (Chinnery, 2006; Albers & Kim, 2001, cited by Viberg & Gronlund, 2013). Also, sometimes, little attention can be paid to guiding teachers and researchers on technological development (Stockwell & Sotello, 2011), training teachers on how to implement these technological tools (Wardak, 2015; Dashtestani, 2013, cited by Bozdogan, 2015), and how effective these tools could be pedagogically (Burston, 2014). In the same article by Burston, in over 600 MALL publications over the past two decades, including three substantial overviews of MALL (Chinnery, 2006; Kukulska-Hulme & Shield, 2008; Burston, 2014), no study has evaluated the learning outcomes of MALL implementation projects systematically.

Where learning improvement might be normally expected in MALL implementation, a few recent studies have similarly reported lack of significant difference in MALL learning outcomes (Derakhshan & Kaivanpanah, 2011; Osman & Chung, 2011; Brown et al., 2012) and most of the argument remains exploratory, lacking empirical support (Nakata, 2008, cited by Nikopour & Kazemi, 2014). Alongside learning outcomes, there is the issue of social equity and a "digital divide" (Hoffman & Novak, 1998; National Centre for Educational Statistics, 2006; National Telecommunications and Information Administration, 1999 cited by Nelson, 2011) where some learners have access to the technology and the internet and other learners do not have access to the tools and also lack the necessary knowledge and skills required for the application of technology. Table 2.5 offers a summary of research critiquing mobile assisted language learning.

Summary of research critiquing mobile assisted language learning	
Derakhshan and Kaivanpanah (2011); Osman and Chung (2011); Brown et al. (2012)	The lack of significant difference in MALL learning outcomes
Nakata, 2008 cited by Nikopour and Kazemi, 2014	No empirical evidence supporting effectiveness of MALL
Hoffman and Novak (1998); National Centre for Educational Statistics, 2006	Digital divide a limitation to MALL implementation
Chun, Smith and Kern (2016)	The use of technology in language classrooms may not be as a blessing

Summary of research critiquing mobile assisted language learning	
Chinnery (2006); Albers and Kim (2001 cited by Viberg and Gronlund, 2013	Related challenges, for example: reduced screen sizes, limited presentation of graphics, virtual keyboarding, and limited power
Stockwell and Sotello (2011)	Little attention paid to teacher's development/training
Wardak (2015)	Lack of training to teachers on MALL
Chinnery (2006); Kukulska-Hulme and Shield (2008); Burston (2014)	No systematic evaluation of MALL implementation projects

Table 2.5 Summary of research critiquing mobile assisted language learning

2.6.1.3. Evidence-deficiency/research gap on mobile assisted language learning

One of the most advanced and essential features of a smartphone is the execution of a third party application also known as an "app", since smartphones are built with an operating system such as Android and Apple iPhone Operating Systems (iOS) (Wu, 2015). These advanced features and technological terms may sometimes sound daunting, making language teachers think that they have to be expert at technology and computer science to implement it in the classroom. As a result, very few applications have been designed and developed by teachers and course designers for foreign language learning (Burston, 2013), that could make a great contribution towards an empirical aspect of MALL. Clearly, applications designed and developed for MALL should be practically effective, focusing on learner needs in a naturalistic setting without much intervention and modification (Wu, 2015).

While technology may enhance vocabulary development, it is always the language teachers' tasks and responsibilities to ensure learnability and teaching activity, even when implementing technology, something that was suggested three decades ago (Laufer, 1990). This involves knowing the ease and difficulty of the words, the selection of words to teach, how the words are presented to the learners and how the memorisation of those words is facilitated. Likewise, developing learners' self-learning strategies is something that only a

language teacher is able to understand, not an artificial facilitator. Therefore, in an ideal world, the app developer will also be the language teacher/educator who will have knowledge of the above aspects and be able to create apps that fit best pedagogically.

2.6.1.5. The link with the current study

The literature on teaching and learning with technology in general and mobile telephones in particular has developed and evolved rapidly during the past two decades, from the pioneering less-advanced CALL to the currently-used smartphones. The majority of studies have reported benefits from technology integration and how ubiquitous use has become. There is a plethora of existing literature on how technology improves teaching and learning, enhances language development, strengthens learner-engagement, motivates learners to participate in learning and how the traditional teaching methods are becoming obsolete. Similarly, most studies conducted in the field of teaching and learning with technology report successful and positive outcomes and the experimental evaluation of their effectiveness. Nevertheless, a limited number of studies have discussed the role of the language teacher when integrating technology into teaching and learning as well as the importance of technologically-enhanced content design (lesson design). There is limited research on the integration of social media and the applications incorporated in the present study (Viber, WhatsApp, Telegram and Facebook Messenger) that are mainly used for socialising. The present study will seek to fill the gap in the field of vocabulary development with social networking applications which are becoming popular among language learners as well as attracting more and more programme users (Alzahrani, 2015).

In order to relate the objectives of the present study to the key gaps and points of emphasis within the literature, it is necessary to add to this review a range of findings and discussion related to content-design and the importance of teacher and student interaction when integrating technology in teaching and learning. Success in learning lies in the design of the contents. In the present study, learners are not provided with words only, or words with definitions only (as in many previous studies conducted on vocabulary development through SMS/text messages), but they are also provided with images, definitions used in different contexts, examples, word family/word building/derivatives and pronunciation, for each new target vocabulary item sent to their smartphones via their chosen socialising application. Similarly, the involvement and interaction between the teacher and learners on each and every learning occasion, which according to Palloff and Pratt (1999,

cited by Carrier, 2006) "primarily generates knowledge" and the fact that interaction between them could be an apparent reason for success in learning with technology because human beings have always been fascinated by other humans (Keddie, 2015), is in contrast to the robotic and artificial facilitator and interaction that takes place through online learning as well as learning with the many installed applications on smartphones.

2.6.2. Previous research on technology integration in ELT (mobile telephones and other handheld devices)

2.6.2.1. Major studies on technology integration in ELT

The integration of technology in language teaching and learning is far from new (Chinnery, 2006). In the study by Chinnery, there is recognition of the availability of several free as well as commercial mobile language learning programmes, such as: "the BBC World Service's Learning English" section which offers English lessons via SMS in Francophone West Africa and China (Godwin-Jones, 2005); "BBC Wales" has similarly offered Welsh lessons since 2003 (Andrews, 2003); and a European Union-funded initiative known simply as "m-learning" provides English lessons directed towards non-English speaking young adults. Lessons are provided in bite-sized format, a fact appealing to busy students (McNicol, 2004), and moblogging, an amalgam of mobile and weblogging (Mielo, 2005). Likewise, the adoption of audio-lingual theory in the 1950s introduced the use of language laboratories in educational settings (Salaberry, 2001, cited by Chinnery, 2006).

Whereas CALL delivered language teaching through methods that were more than just a pen and a paper, MALL and the rise of the internet offered new directions in CALL. These new pathways were embellished with advanced technology, opening up new possibilities for learning since the early 1960s which are beyond sitting in a traditional classroom (Duman et al., 2014). Moving on from the 1960s to the 1980s and into the birth of mobile telephones, Tabatabaei and Goojani (2012) summarised the integration of mobile telephones as follows:

> "The widespread experimentation with mobile devices for learning initiated in mid 1980s when Twarog and Pereszlenyi-Printer used the telephone to provide distant learners with feedback and assistance. During 1990s, instructors at Brigham Young University-Hawaii taught a distance education English course from Hawaii to Tonga via telephone and computer (Green & Evans, 2001). During the 2000s, MALL

continued its progress, for example, Dickey (2001) utilized teleconferencing to teach an English conversation course to students in South Korea. Stanford University learning lab used integrated mobile phones in a Spanish learning program in 2001 (Brown, 2001). Thornton and Houser (2002; 2003; 2005) developed several innovative projects using mobile phones to teach English at a Japanese university. They also developed a course management system to facilitate developing language learning material to mobile phones. University of Wisconsin-Madison developed several foreign language courses which used wireless handheld computers for various classroom activities (Samules, 2003)".

The review of literature in Chinnery (2006) relevant to the history of technology integration in language learning reports the use of telephones in providing learners with feedback and assistance (Twarog & Pereszlenyi-Pinter, 1988), the delivery of lessons to English language learners via telephone and computer in 1966 by Brigham Young University-Hawaii instructors (Green, Collier & Evans, 2001) and the utilisation of teleconferencing in order to teach an English conversation course to students in South Korea (Dickey, 2001). Likewise, the 1970s' cassettes have changed into Compact Disc (CD) players, followed by Moving Picture Expert Group Layer-3 Audio (MP3) files on Personal Computers (PCs) and interactive whiteboards (Carrier, 2006). In addition, from the 1950s to the present, technological tools have evolved and developed with advanced features at an alarming rate. The newly developed tools are pushing traditional teaching methods backwards (according to O'Brayan & Hegelheimer, 2007), making research into MALL out-dated as the tools are developing faster than the up-to-date research (Ballance, 2012). Likewise, today's MALL could be considered tomorrow's CALL, as the prediction of political events and technology is not something that humans are good at (according to Krashen, 2008, cited by Azar & Nasiri, 2014). Table 2.6 offers a summary of major studies on technology integration in ELT.

Summary of major studies on technology integration in ELT	
Azar and Nasiri (2014)	Today's MALL could be considered tomorrow's CALL
Green, Collier and Evans (2001)	The integration of technology in language teaching and learning has a long history
Chinnery (2006); Twarog and Pereszlenyi-Pinter (1988)	The use of telephones in providing learners with feedback and assistance

Summary of major studies on technology integration in ELT	
Godwin-Jones (2005)	Example of mobile technology in language learning
Andrews (2003)	Example of mobile technology in language learning
Mielo (2005)	Example of mobile technology in language learning
McNicol (2004)	Example of mobile technology in language learning
(O'Brayan and Hegelheimer, 2007),	The newly developed tools are pushing traditional teaching methods backwards
Ballance, 2012	Research on MALL has been out-dated
Green, Collier and Evans, 2001	English language learners via telephone and computer in 1966 by Brigham Young University-Hawaii instructors
Duman et al. 2014	MALL providing more opportunities beyond traditional classroom learning
Tabatabaei and Goojani (2012)	Has summarised the integration of mobile phones
Chen and Lui, 2015	Examples of MALL integration into language learning

Table 2.6 Summary of major studies on technology integration in ELT

2.6.2.2. Supporting studies on technology integration in ELT

The integration of technology in language learning has mainly been perceived positively and encouraged to be used in different modes. To the majority of language learners, the use of technology has made learning 'fun, cool and stylish' (Fisher et al., 2012). Technology has resulted in enhanced students' motivation particularly through video and multimedia functions (Garcia-Cabrere, 2002, cited in Chinnery, 2006). The use of video clips for enhanced learning is also supported by Silverman and Hines (2009, cited by Macaro, Handley & Walter, 2012) where the experimental group shows a greater improvement in general

vocabulary knowledge than the control group, who did not receive the treatment. In one particular study, learners were asked to create 30-second videos on their mobile telephones on a topic of their interest while focusing on their spoken language skills (Gromik, 2012). The results of the study showed that the learners relied on their prior knowledge of the target language in order to create perceived meaningful content. The learners had also benefited from the task and perceived the mobile telephones as useful learning tools.

In a study by Thornton and Houser (2005), the use of Personal Digital Assistants (PDAs) and videophones reported positive scores followed by positive evaluation. The use of older and almost obsolete PDAs was supported in the study and praised for their effectiveness in delivering foreign language learning materials to students. Even the notorious small screen sizes, which have mostly been the least favourite aspects of handheld devices, have been perceived positively as Japanese students in the study felt comfortable reading texts and viewing videos on small screens, while capturing their interests and pushing study opportunities. PDAs have also been incorporated in Language Learning Outside the Classroom with Handhelds (LOCH) in a study by Ueda et al. (2006) with positive feedback from the students. The effectiveness of wireless mobile learning is further confirmed in a study by Roschelle (2003, cited by Ogata & Yano, 2004) with the potential to impact learning positively across instructional activities and curricular topics. Table 2.7 offers a summary of supporting studies on technology integration in ELT.

Summary of supporting studies on technology integration in ELT	
Fisher et al. (2012)	The use of technology has made learning fun, cool and stylish
Chinnery (2006)	Technology motivates students
Macaro, Handley and Walter (2012)	Supports the use of video clips in learning
Gromik (2012)	Empirical research on the effectiveness of multimedia-based learning
Thornton and Houser (2005)	Users of PDAs and video phones reported positive scores followed by positive evaluation.
Ueda et al. (2006)	IPDAs have also been incorporated in Language Learning

Summary of supporting studies on technology integration in ELT	
	Outside the Classroom with Handhelds (LOCH)
Selwyn (1997)	Mentions the attractiveness of IT skills
Howland, Jonassen and Marra (2012)	Mentions the emergence of digital natives (tech-savvy modern generation)

Table 2.7 Summary of supporting studies on technology integration in ELT

2.6.2.3. Refuting studies on technology integration in ELT

Several previous studies have reported positive perceptions of technology integration and how the implementation is encouraged by educators in all sectors. However, a handful of previous studies have also reported a less favourable attitude towards technology use when compared to traditional approaches. For example, the focus group interviews in a study by Fisher et al. (2012) revealed several students' preference for a paper book. They believed in the book's "portability, ease of use, lack of strain on the eyes, the ability to annotate the text, and 'paper touch [which] makes me feel I'm reading'." Mobile technologies in the classroom have also been perceived as "intruders" and "disturbance" (Mifsud, 2002, cited by Azar & Nasiri, 2014). Learning with technology, and with mobile telephones in particular, limits access to the teacher by moving the learning away from the classroom (Miangah & Nezarat, 2012). Similarly, Thornton and Houser (2002, p.236) perceive the small screens on the portable devices in their study as "unsuitable for learning new content but effective for review and practice" as well as critiquing poor audio quality which was consequently affecting comprehension.

In addition, the fundamental issue underlying technology integration in language learning, particularly mobile technology, is not just the accessibility and the delivery of information, but the actual contents being accessed and delivered. As much as access, portability, and availability anytime and anywhere is important, it is equally important to pay attention to the materials sent, the relevant items at the right time and place (Ogata & Yano, 2003). To conclude, technology should not only support teachers' and students' teaching and learning goals, but engage learners in "active, constructive, intentional, authentic and cooperative learning" (Howland, Jonassen & Marra, 2012).

2.6.2.4. Evidence-deficiency/research gap on technology integration in ELT

Part 2 of the literature review has so far focused on previous studies related to the integration of technology in language learning. One might claim that any gap found in previous studies might have already been filled and dealt with, especially when the majority of "hardware weaknesses" have been said to be addressed (Miangah & Nezarat, 2012). Therefore, it could appear that there is a minimum need to mention here what previous studies considered was missing. On the contrary though, it becomes even more important to find out if questions asked by previous studies have been answered and gaps filled or otherwise, since mobile telephones as learning resources have previously been considered worthy of further investigation (Kiernan & Aizawa, 2004).

In a study by Chinnery (2006), a review of three substantial studies, around a decade ago, surfaced the gaps in the field of teaching and learning with technology: Copaert (2004) focused on developing the language learning environment and paid more attention to the learner than to the technology used; Salaberry (2001) believed that teaching and learning had become "technology-driven pedagogy", but it was not clear if technology offered the same pedagogical benefits as traditional language instructions; and Beatty (2003) argued that technological tools are not instructors, but they are "instructional tools" and they should be applied pedagogically. The main question at present, and the reason for reporting gaps in the field since 2003, is to find out whether the missing pieces of the jigsaw have been found and put together, or whether a decade later, researchers still report the above arguments as to what is missing.

2.6.2.5. The link with the current study

As mentioned previously, teachers' and researchers' guidance on technological development is as important as their enthusiasm at using the opportunity (Stockwell & Sotello, 2011). The literature review has so far indicated that technology has developed and more and more advanced features are being used in language learning at present. The use of technology in the past four decades has evolved and progressed from a solitary and bolted-down computer with basic textual gap-filling to portable devices involving interactive multi-media presentations where images, films and the internet are incorporated (Davies, 2005, cited by Chen & Lui, 2015). When used outside the classroom, in preparation for in-class language learning, certain problems can be eliminated which have been identified with the use of mobile telephones

being less favourable in previous studies, because of their distractions from incoming calls, messaging friends during class hours and even attempting to cheat during tests (Kiernan & Aizawa, 2004).

In addition, innovation has been an important part of teaching and learning with technology. With the advancement of the technological features, the developers of the software have also become innovative and familiarise researchers and teachers with new methods. Studies by Thornton and Houser (2002, 2003, 2005), which are also relevant to the present study, had similarly developed innovative projects incorporating mobile telephones for teaching English at a university in Japan. The focus of one of the projects was on vocabulary teaching with SMS three times a day. The students were sent the new vocabulary items in small chunks which were readable on small screens. Not only were the students provided with 5 new words per week, but previously-sent vocabulary items were also recycled. Students were assessed biweekly and at the end of the project, the score of the students receiving vocabulary items via SMS were compared with students who received their words on paper. The results showed that the scores, performance, and progress of students who received their words via SMS were twice as high as those students who received them on paper. When asked for feedback, the majority of the students preferred the SMS instruction and considered using the same method in the future. It might be anticipated that the present study will also be found successful and effective because of collaborative learning, incorporation of images and sounds, daily informal interaction between the students and the instructor, as well as providing the learners the opportunity to frequently rehearse, revise and recycle the previously-sent vocabulary items.

In order to relate it more firmly to the present study, a study by Joseph et al. (2005, cited by Chen & Lui, 2015), conducted more than a decade ago, also incorporated images and photographs in a multiple-choice activity. Similarly, Hasegawa et al. (2008) support the idea of creating and implementing shared learning materials for vocabulary learning in a database, accessed by other members and supporting memory retention through images and movies. To conclude, the present study is based on collaborative learning, where participants learn in groups created in socialising applications. They select the applications in the classroom according to personal preference and were subsequently added to their groups in their chosen applications by the researcher in order to receive their daily target words via their chosen apps. They accessed shared materials, sent to all group members simultaneously, that were vocabulary items with images, definitions, examples, derivatives, pronunciation, synonyms

and antonyms, as recommended in McCrostie (2007) and it was anticipated that their memory retention would also be supported, which will be identified at the end of the study period.

2.6.3. Most recent research on technology integration in ELT and learning (Smartphones, Apps and Messaging)

Researchers have conducted many studies on the use of mobile telephones, and as previously mentioned, the majority of the studies have been conducted since 2008, focusing on the effectiveness of learning vocabulary items. Based on the findings from these studies, it can be confirmed that MALL has a significant supplementary role in the teaching of new vocabulary items (Khazaei & Dastjerdi, 2011, cited by Tosun, 2015). Students are able to learn vocabulary more effectively with mobile telephones than with paper, on a short-term basis (Zhang, Song & Burston, 2011, cited by Tosun, 2015). The applications on the telephones used for multi-media were found to be useful in encouraging learners to use the tool (Huang at al., 2012, cited by Viberg & Gronlund, 2013) as well as expanding social inclusion in language learning (Chinnery, 2006). In this section of the literature review, the supporting arguments for the use of smartphones, apps and messaging will be provided.

2.6.3.1. Major studies on most recent research on technology integration in ELT and learning

2.6.3.1.1. Smartphones

Language teachers and learners have regularly had to embrace new ideas, methods and approaches in their language classrooms, whether in the form of traditional teaching approaches or technologically-enhanced approaches. The traditional black and white text-books with drawing and sketches have changed to colour books with photographs of real places and events, and better paper quality. Technologically, cassette players have turned into CD players and later, iTools were made available where the entire audio and video materials could be uploaded to the desktop in the classroom, without the need for having to carry cassette/CD players. As far as teaching and learning outside the classroom is concerned, the 2006-2008 period of vocabulary teaching with mobile telephones (Viberg & Gronlund, 2013)

has transformed into the 2007-2009 period of teaching and learning with smartphones (Stockwell & Sotillo, 2011) due to the arrival of MALL.

According to Achilleos and Jarvis (2013), "we are now in a post-CALL era and that the acronym no longer suits its purpose". The evolution of MALL from CALL has not only brought advanced features and development into the field of teaching and learning with technology, but it has also filled gaps and found missing parts in the field discussed and reported by previous researchers. In the contemporary digital era, smartphones and other mobile devices have enabled unconscious and informal exposure to the English language outside normal educational practices (Birmingham, 2015). The limitations reported in previous studies regarding vocabulary development with mobile telephones such as activities taking longer on mobile telephones compared with a computer, internet access cost, scrolling time, small screens and key pads (Stockwell, 2010) have already been resolved due to the arrival of smartphones. While keypads may still be the same size, but with touch function, in a particular study, the use of a small mobile keypad was reported to be easier than a large computer keyboard for students who have not yet learned to type efficiently (Kiernan & Aizawa, 2004). In the post-smartphone era, the majority of learners in some environments can afford smartphones with Wi-Fi, touch screens and third party applications integrated into the devices (Martinez & Schmitt, 2010).

The majority of studies in this field support the integration of MALL when compared to CALL, for the introduction of the latest smartphones, tablets and other sophisticated advanced hand-held devices. It has been found that language learners find these devices appealing and effective for their "wide availability, convenience, portability, accessibility, multi-media capability, internet connectivity and cost efficiency" when compared to computers or laptops (Wu et al., 2012). As a result, learners are not constrained to time and space when interacting with their peers or facilitators (O'Malley et al., 2003), learners are mobile and "able to engage in educational activities without being tied to a tightly-delimited physical location" (Kukulska-Hulme, 2010). Likewise, not only are the handsets mobile and available anywhere and anytime, but because of this, the learner can also be mobile and learn 'on the go' (Pegrum, 2014). In a study by Ahmad et al. (2013), the following advantages were reported from other sources: portability and connectivity (Cavus & Ibrahim, 2009); blended-learning, providing combined in-class face-to-face and online learning (Tai, 2012; Zarie, Jalilifar & Khazai, 2013); various levels of interaction allowed (Chen, 2013); collaboration which supports communication between the teacher and the learners (Cavus & Ibrahim, 2009; Chen,

2013); as well as permanency, accessibility, immediacy, interactivity, situational and instructional activities (Ogata & Yano, 2004).

"Since their inception, the dimensions of cell phones have waned as much as their abilities have waxed" (Chinnery, 2006). It is more than a decade since this statement was made and humanity is now dealing with smartphones, which makes it possible to learn communicatively and access a variety of kinds of learning materials. With these new smartphones and their operating systems, for example iPhone, Android and Windows 7, they have enabled enhanced capabilities such as application downloading and attracted the attention of educators. As far as researchers are concerned, publication on mobile learning or m-learning is not new. However, after 2008, the number of publications increased (n=13) and then reached a peak in 2014 (n=14) with major contributions from Kukulska-Hulme (2009) and Stockwell (2010) focusing mostly on teaching vocabulary (Duman, 2014).

One of the greatest benefits of mobile telephone learning, according to recent studies, is the informal learning environment. Achilleos and Jarvis (2013) state that the biggest and most major transformation from CALL, where desktop acquisition used to take place, to Mobile Assisted Language Use (MALU), where informal out-of-class learning happens, is the anytime/anywhere information access alongside broader social and academic use. As a result, learners join a 'seamless learning space' (Chan et al., 2006, cited by Wong & Looi, 2010) and take advantage of learning in an informal context while creating their individual and social learning space.

2.6.3.1.2. Apps

The advancement and upgrading of smartphones is a non-stop, never to cease process. From 2007, with the iPhone and its latest model, as well as its rival competitors in the market such as Android and Windows 7 telephones, consumers and developers witnessed a dramatic change and improvement in the features of these devices. The most advanced feature of a smartphone enables its owners to use them as their personal devices that can be ideal for individualised informal learning (Godwin-Jones, 2011); the combined formal and informal learning encourage and assist learner autonomy. More importantly, learning is tied to a learner's life outside the academic environment, making learning potentially real and permanent. The power and versatility of smartphones allow their users to make these tools as

a primary or even sole computing device (Godwin-Jones, 2011). As a result, educators can develop a more sophisticated and powerful vocabulary development programme.

2.6.3.1.3. Messaging

In a recent study by Wu (2015), researchers searched for vocabulary acquisition techniques and proposed the "pushing" and "access" theories for intentional vocabulary learning (Thornton & Houser, 2001, 2004, 2005; Stockwell, 2007, 2008, 2010; Song & Fox, 2008; Kennedy & Levy, 2008; Lu, 2008). Pushing refers to short messages containing vocabulary items, sent to learners at spaced intervals which presumably push them to learn the words. Access, on the other hand, refers to the accessibility of the mobile telephones and their ready-to-hand access which could also function as a personal 'learning hub' (Wong & Looi, 2010). Using this technique, learners are able to turn "dead time" into useful study time (Stockwell, 2010) as well as accessing materials from their telephones during leisure time (Kadyte, 2004, cited by Fisher et al., 2012). However, while push and access may seem an effective approach for vocabulary acquisition, there could be possible drawbacks associated as well. For example, in a study by Wu (2015), for some learners, it can be frustrating to wait for messages to be sent. Also, having learnt and mastered the previously sent messages, they are not able to have access to the new contents until the facilitator sends the new words to the learners (Wu, 2015).

2.6.3.2. Supporting studies on most recent research on technology integration in ELT and learning

2.6.3.2.1. Smartphones

So far, the literature has presented a wide range of previous studies in the field of teaching and learning with technology in general (teaching and learning with smartphones in particular). The vast majority of these studies support the integration of new methods and approaches involving smartphones and report considerable success and effectiveness in applying these tools. In a study by Azar and Nasiri (2014), the experimental group which was provided with mobilephone-based audio books for their listening comprehension,

outperformed the control group that did not receive the instruction through the mobile phone. The study subsequently reported the advantages of incorporating the cellphones and mobile telephones as "portable, socially interactive, context-sensitive, connective and individual to language learners" (Klopfer et al., 2002, cited by Azar & Nasiri, 2014). Learners are able to interact and communicate with their peers as well as their teachers with minimum time and space constraints (Chinnery, 2006). They are also able to receive "the provision of comprehensible input, negotiation of meaning, and comprehensible output" (Ahmad et al., 2013).

Moreover, the most important aspect of mobile telephone integration in language teaching and learning is the fact that learning can take place outside the classroom, connecting learning with real-world experiences. Not only that, but learners are also able to turn their free time into a useful activity and learn on the move (Kukulska-Hulme, 2009). Similarly, Uosaki et al. (2012) support a seamless mobile-assisted language learning system (SMALL) where out-of-class vocabulary learning is entwined with in-class learning. Seamless learning illuminates the idea that "learning can occur wherever they are, and that every learner both in-class and out-of-class interacts with each other, which should result in effective and fruitful learning experiences" (Uosaki, Ogata, Sugimoto, Hou, & Li, 2012, p.102). The study reports significant effectiveness in a learner's vocabulary acquisition with an added "fun" factor to the training of vocabulary.

Empirical investigations conducted in the past show that mobile telephones (followed by smartphones) are effective in vocabulary learning (Thornton & Houser, 2005; Cavus & Ibrahim, 2009; Lu, 2008, cited in Wu, 2015; Hayati, Jalilifar & Mashhadi, 2013; Wang, 2016). All of these studies have reported improved learning and a significant difference between the control and experimental groups' results at the end of the research, and therefore enhancing the learners' second language acquisition (Viberg & Gronlund, 2013). Similarly, when compared to traditional approaches, "mobile phones enhance regular study, lead to more exposure to the target words and more vocabulary gains than the detailed presentation of the lessons do" (Thornton & Houser, 2005). Learners are more motivated to learn by building social and collaborative learning environments that are considered a necessity for language learning (Kukulska-Hulme & Shield, 2008). As a result, there is a substantial preference towards using mobile telephones for vocabulary acquisition (Muhammad, 2014, cited by Bozdogan, 2015; Suleimani et al., 2014). Table 2.8 offers a summary of supporting studies on most recent research on technology integration in ELT and learning (Smartphones).

Summary of supporting studies on most recent research on technology integration in ELT and learning (Smartphones)	
Azar and Nasiri (2014)	Mobile-based audio books improves performance in learning vocabulary learning
Chinnery (2006)	Interactive communication through smartphones
Kukulska-Hulme (2009)	Smartphones allows wise use of free time for learning
Uosaki et al. (2012); Uosaki, Ogata, Sugimoto, Hou and Li (2012); Wu (2015)	Support seamless mobile-assisted language learning system (SMALL); out-of-class vocabulary learning is entwined with in-class learning
Viberg and Gronlund (2013)	Mobile phones enhance regular study, lead to more exposure to the target words and more vocabulary gains
Kukulska-Hulme and Shield (2008)	Smartphones allow for collaboration and socialisation during learning
Bozdogan (2015) and Suleimani et al. (2014)	Mobile phones preferred in language acquisition due to smartphones

Table 2.8 Summary of supporting studies on most recent research on technology integration in ELT and learning (Smartphones)

2.6.3.2.2. Apps

The recent technological innovation of smartphones allows their customers to download and use a variety of applications or apps that can be used for language learning. Through third generation (3G) smartphones, users are able to download and install native apps, which can be used without the internet connection and web apps (Yan & Liping, 2013). Because of these technological advances, MALL activities can be based on apps that similarly exploit touchscreen technology and can be used in situations MALL has introduced (Godwin-Jones, 2011). Since smartphones are readily available and the majority of the learners are able to afford buying them, the present study has tried to implement other ways of developing

learners' EAP vocabulary. This approach not only requires less classroom time, but also invites learners to learn in a 'fun' and motivating way.

Previous studies that have incorporated the use of apps in smartphones for vocabulary learning have reported positive results. Sandberg et al. (2011, cited by Viberg & Gronlund, 2013) had incorporated a game-based application and reported students' motivation for using the app activities in their spare time. Similarly, Wong et al. (2010, cited by Chen & Lui, 2015) used a photo-taking app on the students' iPhone to illustrate Chinese idioms. The idioms in the study were studied and shared alongside comments with other group members through a wiki page. The study offers improvements for similar projects based on the students' actual environments. Likewise, the use of video lessons about English idioms on smartphones reported in Stockwell (2010) and flashcards with words and images in Chen, Hsieh and Kinshuk (2008, cited by Stockwell, 2010) report 'fun' and useful learning with longer knowledge retention. Table 2.9 offers a summary of supporting studies on most recent research on technology integration in ELT and learning (Apps).

Summary of supporting studies on most recent research on technology integration in ELT and learning (Apps)	
Yan and Liping (2013)	Mentions the possible of 3G-enabled phones in downloading apps
Godwin-Jones (2011)	The exploitation of touchscreen possibilities
Viberg and Gronlund (2013)	Use of apps in smartphones for vocabulary learning have reported positive results
Stockwell (2010); Viberg and Gronlund (2013)	Learning English idioms through smartphones is fun
Chen and Lui (2015)	Evidence of using apps in capturing Chinese Language idioms

Table 2.9 summary of supporting studies on most recent research on technology integration in ELT and learning (Apps)

2.6.3.2.3. Messaging

Another substantial development in the field of mobile technology is SMS-based learning, where learners receive text-messages from their teacher outside the classroom (Kukulska-Hulme, 2009). SMS use for teaching is regarded as a practical and realistic mobile learning technology that can be used in natural and authentic settings while bearing in mind the pedagogical consideration (Hayati, Jalilifar & Mashhadi, 2013). Song and Fox (2008, cited in Hsu, 2015) also emphasise the integration of learning applications on mobile devices that can support learners of all ages whether in or out of the classroom. This allows researchers to outline different ways in using mobile telephones, particularly for the study of English as a Foreign Language, vocabulary development and learning in higher education.

In a pre-smartphone era, SMSs were used for sending vocabulary items to students' mobile telephones, which was reported to be effective (Kennedy & Levy, 2008; Cavus & Ibrahim, 2009; Thornton & Houser, 2004). All of these studies reported successful outcomes. According to Thornbury (2006), there are two factors that determine retention: easier words are retained better; and words learned at spaced sessions are retained better in comparison to those that are learnt in concentrated bursts. This is also confirmed in Melton (1970, cited in Cerni & Job, 2012) where the author argues that learning can be more effective when content is presented over time rather than in quick succession. Furthermore, employing SMS has the following advantages according to Lomine and Buckingham (2009, cited in Motallebzadeh & Ganjali, 2011):

- SMS is quick, discrete, to the point, and inexpensive
- Improves students' motivation and retention and involves them more actively
- Requires little or no familiarisation or training

Smartphones, on the other hand, have presented humanity with more sophisticated and advanced features for sending messages, not only through the messaging app, but also other apps that use the internet instead of mobile courier charges, such as Viber, Snapchat, WhatsApp, Skype, WeChat, etc. Previous studies that incorporated MMS-based projects report positive MALL learning outcomes (Saran, Seferoglu & Cagiltay, 2012; Lin & Yu, 2012, cited in Burston, 2014). The multimedia or MMS contains much more than just the words and their definitions, such as visual representations, pronunciation and a higher word

limit in case the sender wishes to send examples and longer definitions. The present study incorporates MMS sent to learners via socialising and communication apps such as Viber, WhatsApp, Telegram and Facebook Messenger. It is anticipated that the chosen design and implementation will motivate the learners for learning informally out-of-class through their use of smartphones and result in better outcomes compared to the previous studies that had incorporated SMS. Table 2.10 offers a summary of supporting studies on most recent research on technology integration in ELT and learning (Messaging).

Summary of supporting studies on most recent research on technology integration in ELT and learning (Messaging)	
Kukulska-Hulme (2009)	SMS-based learning is more effective
Hayati, Jalilifar and Mashhadi (2013)	SMS learning realistic and practical
Song and Fox (2008) cited by Hsu (2015)	Emphasise the integration of learning applications on mobile devices that can support learners of all ages whether in or out of the classroom
Kennedy and Levy (2008); Cavus and Ibrahim (2009); Thornton and Houser, (2004)	Photo messaging possible through smartphone apps
Thornbury (2006); Cerni and Job (2012)	Easier words and spaced sessions enhance language vocabulary learning
Motallebzadeh and Ganjali (2011); Burston (2014)	SMS enhances language learning

Table 2.10 Summary of supporting studies on most recent research on technology integration in ELT and learning (Messaging)

2.6.3.3. Refuting studies on most recent research on technology integration in ELT and learning

2.6.3.3.1. Smartphones

As reported in sections 2.6.1.3 and 2.6.2.3 of the literature review, the integration of smartphones might not always be perceived as an ideal approach in a language classroom. In this part of the literature review, a few additional points are added, related to the drawbacks of

smartphone integration. These handheld devices have been less preferred for their "reduced screen sizes, limited audio-visual quality, virtual keyboarding, limited power and one finger data entry" (Chinnery, 2006). Additional disadvantages include "limited non-verbal communication, limited message lengths and lack of cultural context and potentially limited social interaction" (Colpaert, 2004, cited in Chinnery, 2006). In terms of the internet connectivity and the availability of Wi-Fi, for Howland et al. (2012), there is a concern over students going off task and becoming easily distracted by the many interesting topics that are available to explore online.

Regardless of how advanced the smartphones become, they will always be smaller in size and capacity than a desktop or a laptop computer. Their accessibility, mobility, and learning anytime/anywhere will usually be constrained by the cost of internet access, physical characteristics (small screen size), input capabilities (keypad and touch-pad), output capabilities (sound and audio functions) and processor speed (Stockwell, 2010). Larger screens of computers are preferred for reading and writing activities (Suleimani at al., 2014). Despite their flexibility, accessibility, interactive technology in their lives and regardless of their screen sizes, learners in a study by Woody, Daniel and Baker (2010) preferred text books over e-books for reading activities. This was primarily due to the learners' comfort and familiarity with text-books. In addition, the strong visual interactive elements that have been perceived as the strengths of e-books have also been perceived as a "strain on the eyes".

Despite the popular reasons for favouring smartphones, such as portability, flexibility and accessibility anytime anywhere, one major drawback noticed by Fallahkhair, Pemberton and Griffiths (2007) is the authenticity of the contents when compared to other tools such as television. For example, a television may be a complete opposite of a smartphone in terms of the aforementioned mobile characteristics, but the biggest advantage that the television has over other technological tools for language learning is the authentic materials available, such as real-life documentaries, news and everyday related programmes that produce not only sound and moving pictures but also bring to the learners a rich, real, authentic and living language that can also be of an intrinsic interest to the learners. Fallahkhair, Pemberton, and Griffiths further propose the idea of capitalising the strength of both tools; television and mobile telephones could bring interactive television (iTV) to the field of language learning. Alongside numerous perceived benefits of using smartphones, there are also certain drawbacks that are reported in these studies. Future work on vocabulary development with smartphones will be more successful and effective if the developers are made aware of the

learners' needs and are guided to develop apps that meet learners' needs. Likewise, instructors could be trained on how to develop an app that is bespoke and tailored to specific learners' needs. Table 2.11 offers a summary of refuting studies on most recent research on technology integration in ELT and learning (Smartphones).

Summary of refuting studies on most recent research on technology integration in ELT and learning (Smartphones)	
Chinnery (2006)	Challenges of smartphones: reduced screen sizes, limited audio-visual quality, virtual keyboarding, limited power and one finger data entry
Howland et al. (2012)	Smartphone challenges with Internet connectivity
Stockwell (2010)	Wi-Fi challenges with keypad and size problems
Woody, Daniel and Baker (2010)	E-books are better and preferable to smartphones
Fallahkhair, Pemberton and Griffiths (2007)	Smartphones not as authentic as large screens like iTVs

Table 2.11 Summary of refuting studies on most recent research on technology integration in ELT and learning (Smartphones)

2.6.3.3.2. Apps

While according to previous studies the majority of educators, instructors and learners perceive smartphones positively and see potential benefits in using them, there are, however, a proportion of students who do not want to engage in learning with smartphones. Many of the concerns raised by previous researchers have mostly been dealt with by the advanced features of the current smartphones. Kukulska-Hulme's (2005) argument about the fact that mobile telephones are not designed for educational purposes and learners find them difficult to use for activities assigned by their teachers, may have been answered and dealt with by the latest educational apps, available for all ages from third parties to install on most smartphones. While the leading brands such as iPhone, Nokia, Samsung, Sony and Blackberry might be expensive for learners to purchase, the non-competitor brands of

smartphones are considered as efficient as the leading ones and available for a much lower price.

The majority of functional shortcomings of mobile telephones that limit foreign language learning (Burston, 2014) have already been dealt with, incorporating the advanced latest features of smartphones to date. For example, the small keys for typing have now been transformed into an easy and smooth touch screen technology. The screens are larger and the visibility of the screens is much clearer and highly defined compared to previous mobile telephones. However, there are still certain drawbacks that will probably always exist, regardless of how advanced the devices become. The disadvantages of using smartphones and less favourable attitudes reported by previous studies, is mainly based on issues with apps, the contents sent and received, the physical qualities of the telephone and the absence of a significant difference in the results of those learners who use the smartphones compared to those learners who do not use them (Burston, 2014).

Not all learners possess similar brand smartphones. iPhones might be perceived as the dominating handsets, but the majority of learners or educators prefer using the Android operating system. The main issue here is that if an app is developed on an Android operating system, iPhone users may not be able to install it on their handsets and as a result they are unable to benefit from the technology. Similarly, the majority of apps developed on the Apple store for iPhone users are not available on the Android market. Native app development, according to Goodwin-Jones (2011), may not be the best choice for language learning purposes. The difference in programming environments, the lack of knowledge of programs such as Objective-c or Java, and the re-creation of the apps for a different platform, are the least favourite aspects of app incorporation in smartphones. Table 2.12 offers a summary of refuting studies on most recent research on technology integration in ELT and learning (Apps).

Summary of refuting studies on most recent research on technology integration in ELT and learning (Apps)	
Kukulska-Hulme's (2005)	Mobile phones not designed for learning/educational purposes
Burston (2014)	Smartphones majorly designed in foreign language

Summary of refuting studies on most recent research on technology integration in ELT and learning (Apps)	
Goodwin-Jones (2011)	Mobile phones are designed in native languages, hence not suitable for Second Language Learning

Table 2.12 Summary of refuting studies on most recent research on technology integration in ELT and learning (Apps)

2.6.3.3.3. Messaging

In a study by Tosun (2015), findings based on students' perceptions of blended learning, the majority of the participants showed lack of interest in both the contents of the digital tools as well as the activities in the classroom. The teacher's "blend" was not effective and vocabulary development was not achieved. The contents of the learning were also perceived as teacher-centred and lacked factors that could encourage and motivate learners. In this case, the instructor or teacher did not know the learners well and had assumed to make e-learning a powerful option for those who lacked self-discipline and autonomy. It is therefore important for all educators to know that in blended learning or hybrid learning environments (Hinkel, 2011), which is the mix of face-to-face and online learning (Hanington & Kwah, 2014), the teacher is still responsible for the blending by "actively selecting, sequencing, integrating, with the classroom learning experience in order to achieve a more optimum learning experience for the learners" while focusing on learners' needs (Carrier, 2006).

The use of smartphones for vocabulary learning has also attracted the attention of many researchers. While the result of the studies conducted on vocabulary learning with smartphones are mostly expected to be positive and effective, a number of studies have reported no significant difference between the post-test results of the experimental group using smartphones and the control group using traditional methods (Macaro, Hendley & Walter, 2012; Zhang, Song & Burston, 2011; Alemi, Sarab & Lari, 2012; Derakhshan & Kaivanpanah, 2011; Fisher et al., 2009, cited in Burston, 2014; Suki, 2011, cited in Rinehart, 2012). A study by Wu (2015) also reported certain issues with SMS and messaging with smartphones. For example, sending larger messages even if the network provider allows it can be problematic and requires patience to scroll down a small screen and keypad. Table 2.13

offers a summary of refuting studies on most recent research on technology integration in ELT and learning (Messaging).

Summary of refuting studies on most recent research on technology integration in ELT and learning (Messaging)	
Tosun (2015)	Students lack interest in using digital tools
Hinkel (2011): Hanington and Kwah (2014)	Mention challenges with blended or hybrid learning
Carrier (2006)	Online learning should be blended with face-to-face learning to be effective
Macaro, Hendley and Walter (2012); Zhang, Song and Burston (2011); Alemi, Sarab and Lari (2012); Derakhshan and Kaivanpanah (2011)	No difference between using smartphones and traditional learning methods

Table 2.13 Summary of refuting studies on most recent research on technology integration in ELT and learning (Messaging)

2.6.3.4. Evidence-deficiency/gap in most recent research on technology integration in ELT and learning

Viberg and Gronlund (2013) outlined areas of problem and stated that there is little cumulative research and that general concepts are shared mostly in the literature, such as MALL, without focusing on a particular area. Also, small-scale experimental studies dominate the field, lacking conceptual and theoretical models with a specific reference to mobile learning. This makes it difficult to distinguish between mobile learning theories and other learning theories. The majority of researchers in the field have paid attention to MALL in vocabulary development, overlooking other various kinds of learning, and have minimally developed effective methods, techniques and materials for MALL. In addition, most studies are conducted over a short period of time using a small sample size which results in inconclusive generalisable outcomes of the study.

As mentioned at the beginning of the literature review, mobile telephones have been incorporated in language learning for most language skills such as reading (e.g. Hsu, Hwang,

& Chang, 2013; McClanahan, Williams, Kennedy, & Tate, 2012; Brenneman et al., 2007), speaking and listening (e.g. Liu & Chu, 2010; Azar & Nasiri, 2014; Demouy & Kakulska-Hulme, 2010), writing (e.g. Li & Hegelheimer, 2013), vocabulary (e.g. Lu, 2008; Thornton & Houser, 2005; Wu, 2014), and enhanced pronunciation (Gasparini & Culen, 2012). However, according to Viberg and Gronlund (2013), the two underrepresented skills reviewed in the literature are grammar and writing. The inconclusive results on the effectiveness of mobile telephones in grammar and writing skills are also stated in Macaro, Hendley and Walter (2012). Moreover, a certain number of studies have analysed mobile technology applications on second language acquisition in general terms without specifying any particular language knowledge or skill (Fallahkhair et al., 2007; Petersen & Markiewicz, 2008; Abdous, Facer, & Yen, 2012; Oberg & Daniels, 2012; Hsu, 2012, cited in Viberg & Gronlund, 2013). Teachers need to be aware of their learners' tools, and language needs, in order to choose and adapt resources to suit these tools (Kukulska-Hulme, 2005).

While developers are expected to create apps that meet educational requirements and expect teachers to deliver the contents and focusing on learner needs and the type of tools, it is equally important for researchers in the field to conduct studies in a way that provide useful and helpful results upon which educators and other researchers can rely. In a review of 291 studies by Burston (2014), 35 studies met minimal conditions of sample size and duration and sixteen studies were faced with design shortcomings. Only nineteen MALL studies could be found reliable, that could serve as a basis for determining the learning outcomes of mobile-based language applications. Likewise, fifteen studies reported unequivocal positive results focusing on reading, speaking and listening, and proving the advantages of MALL application. Regarding vocabulary learning, four studies reported no significant differences.

2.6.3.5. How the present study contributes to the knowledge gap

Previous research studies have reported the incorporation of smartphones in different language learning areas such as EFL, vocabulary learning and other skills that are necessary for the development of a language: listening, reading, writing, speaking and pronunciation. In terms of vocabulary development, there have been different methods and approaches implemented, such as sending and receiving SMSs and multi-media messages providing collaborative learning between the facilitator and the learners. One of the previous studies in

the current literature review that strongly relates to the aim of the present study is by Chen and Lui (2015) that reports the incorporation of images. This study believes that when smartphone cameras are used for capturing images, instead of the more traditional hand-drawing on a piece of paper, it can facilitate the retention of words and phrases. The main advantages of a smartphone camera are reported as quickly recording information, the manipulation of digital photographs, having photographs that can be saved and managed and, most importantly, they can aid retention. It can also assist learners to acquire a concrete picture of certain ideas that they may wish to use (Condon, 2008, cited in Chen & Lui, 2015).

As a result, mobile learning has moved out of the classroom into the real world. The only requirements are that learners start to use the tools willingly in order to reach their full potential. Learners also need to be encouraged to experiment with their smartphones in their learning, in informal natural contexts, settings that support subconscious language acquisition which is believed to be more powerful than conscious learning (Krashen & Jarvis, 2014). The willingness and motivation to use the technological tools may not be too difficult to achieve, as the majority of learners have grown up with technology and this technology has become an integral part of their lives. Likewise, teachers are required to design authentic activities and materials for their learners since "successful use of mobile technologies relies on keeping up with our changing learners, and continuing to give them opportunities to experiment and discover" (Stockwell, 2010).

The following section of the literature review will summarise the similarities between the present study on 'Mobile Assisted Language Learning (Mall): Teacher uses of smartphone applications (apps) to support undergraduate students' English as a Foreign Language (EFL) vocabulary development' and the previous research studies conducted with mobile telephones. The primary tool used in the present study is a 'smartphone' and the contents sent by the researcher to the learners are EAP words via messaging. Nevertheless, they are not plain SMS and text messages as used in previous studies, but the messages contain e-flashcards with visual representations. It is anticipated that the pictorial annotations will assist learners with high visual ability to retain the vocabulary items over a longer period (Chen & Hsieh, 2008). There are, therefore, two digitised tools for delivery; online flashcards and mobile telephones (Nikopour & Kazemi, 2014).

After word-lists, the second most popular technique for the teaching and learning of vocabulary in the past has been the use of flashcards. Flashcards have been widely used and

made available in most language courses. However, according to Oxford and Crookall (1990), there has not been any empirical testing on the effectiveness of the flashcard technique. One enhancement to flashcards is the visual context, where pictures are also associated with the words on the cards. Likewise, the present study will incorporate images and visual representations in the flashcards that are sent electronically to the learners. Moreover, in learning second language vocabulary, visual imagery can be a useful semi-contextualising aid for making associations between a picture and a word. The theory behind this technique is that the majority of learners are capable of learning more effectively by associating new information to concepts in memory through means of meaningful images. Similarly, visual imagery is known to help learners to package information more efficiently than they could if using words alone (Bower, 1970; Higbee, 1979; Nyikos, 1987; Shephard, 1967, cited in Oxford & Crookall, 1990).

In addition, learners will be added to a group, where they will observe each other, read each other's comments and learn the new language in collaboration. This will seek to support, motivate and encourage them to evaluate each other's learning (Miangah & Nezarat, 2012; Joseph et al., 2005; Pemberton et al., 2010; Wong & Looi, 2010, cited in Fisher et al., 2012) as well as shift from solitary to collaborative learning in a distributed learning space (Ogata & Yano, 2004), while providing "rich, real-time, convenient, collaborative, contextual, and continuous learning" (Kukulska-Hulme, 2006). Moreover, collaborative learning and acquisition can also be stimulated with instant messaging and feedback (Fotouhi-Ghazvini, Earnshaw & Haji-Esmaeili, 2009).

The messages will not be sent via a mobile network courier and over a normal text-messaging route. Instead, the present study has incorporated socialising apps. The reason for this is not only to be able to easily send multimedia messages, increase communication and allow collaboration (Crismond, 2012), but also have all participants added to a group and be able to monitor their "read" and "seen" reports of the messages. This is important, because the majority of the learners' socialising apps have become their most accessed and opened apps. In addition, these social media technologies are avidly adopted by learners (Halic, Lee, Paulus, & Spence, 2010; Sunil Hazari, Alexa North, & Deborah Moreland, 2009; Junco, Heiberger, & Loken, 2010; Kear et al., 2010, cited in McAliney, 2013).

The use of socialising apps in education is considered powerful enough to capture and support the willingness that humans have to bond and interact with each other, provided that learners immerse themselves into the online community (Crismond, 2012). Similarly, the learning is

not only based on their classroom syllabus, but also includes authentic images and examples on socialising apps, which are framed around students' real-life contexts (Mishan, 2005, cited in Wong et al., 2010). It is anticipated that this will result in meaningful learning based on active, constructive, intentional, authentic and cooperative activities (Crismond, 2012).

2.7. EAP and the importance of academic vocabulary development

2.7.1. Major studies on EAP and academic vocabulary development

"Vocabulary is the backbone of any language" (according to Tosun, 2015) and acquiring an extensive and varied vocabulary is important for communicative competence (McCrostie, 2007). As an essential component in any language, one might be able to convey little with no grammar, but without vocabulary, nothing can be conveyed (Wilkins, 1972, cited in Uosaki, Ogata & Mouri, 2015). Similarly, an expert in grammar may fail to communicate if he does not have an extensive knowledge of vocabulary. Comprehension is also not possible without vocabulary and "the more one masters vocabulary, the better the comprehension" and as a result more acquisition of language occurs (Krashen & Terell, 2000). It is the insufficient size of vocabulary that hinders the development of other language skills (Yang, 2004, cited in Wang, 2015). It is the operation of a sufficiently large vocabulary with which one can express ideas effectively (Huang et al., 2012). It is the same issue for many foreign language learners who struggle to increase their vocabulary size and be able to remember the right word at the right time in a conversation. Such feelings subsequently hinder the development of other skills in language learning. It is no wonder why, 'when students travel, they do not carry grammar books, they carry dictionaries' (Krashen, 1983, cited in Lewis, 1993) which is also similar to the popularity in using 'Google translator' and not 'Google grammar checker' that has not been created yet. Moreover, vocabulary knowledge is a fundamental requirement for every language learner. As far as vocabulary knowledge in EFL is concerned, the learner is required to understand the 5,000 base words in a non-specialised English test (Laufer, 1997; Nation, 1990, cited in Thornton & Houser, 2005) and 1,200 words for largely unpredictable speaking activities (West, 1960, cited in Hinkel, 2011).

In the 1980s, vocabulary development was not seen as a priority, due to the lack of theory to account for the nature of second language vocabulary knowledge in how the lexis developed (Read, 2013). Similarly, in a traditional language classroom, grammar used to be the priority

area for language development, with little attention paid to the development of vocabulary items that has more recently become an area of interest for researchers (Carter, 1987; Carter & McCarthy, 1988). As a result of interest in the field, researchers have proposed new strategies and methods including the integration of technology in order to improve the learning of vocabulary items. Vocabulary teaching remains a popular research focus to date (Duman, 2014). With regard to the integration of technology in vocabulary learning, the use of mobile devices including smartphones seems effective and a successful application (Ya et al., 2013, cited in Duman, 2014).

Previous studies have found that most EFL learners avoid the low frequency or advanced vocabulary items; they mainly use the easiest available words; they do not normally interact with native speakers and in most cases they do not or cannot integrate into the target language culture. According to Mitchell and Myles (2004), culture is inseparable from the target language and it is therefore acquired together, with each providing support for the development of the other. The participants in the present study were also foreign students who had very little or no interaction with native English language speakers. Despite living in Britain and in the target language country, most of them were living in shared houses with housemates from their native countries and communicating in their first language. Therefore, they had very little exposure to the target language and very few chances of recalling the learnt vocabulary items.

Vocabulary learning is a continuous process and language teachers and researchers need to consider and bring in new ideas, methods and approaches to the field. One of these approaches is the teaching and learning of vocabulary with technology, which has been an area of interest for researchers and teachers for more than two decades. According to Levy (1997), vocabulary has been a research focus in CALL, subsequently researched in MALL. In recent years, vocabulary has been one of the most commonly taught language fields through technology and the majority of the literature reviewed can indicate that mobile technology is able to assist vocabulary learning in different ways (Stockwell, 2007). However, the results of previous studies conducted in the field vary according to the length of time spent on the project, the number of words provided to the learners on a daily/weekly basis and most importantly, the tools implemented in the projects. Some studies report outstanding results, some report considerable outcomes, while other studies have also reported little or no difference between the group of learners who receive the words through technological tools and the group who receive the words in a traditional way.

One of the most common traditional approaches for the teaching of vocabulary in the late 1990s was the use of "wordlists". In this approach, there is no direct instruction by the teacher, but the experience of researchers indicates that it has been a very common method, though not very effective in communicative contexts. Similarly, in the past, the main technique used to be 'rote memorisation' and the target words would sometimes appear alone, and on other occasions they would appear with the learner's first language equivalents (Oxford & Crookall, 1990). This latter study admits that the lists have not been very useful and have disappointed the language learners when trying to use these words in a communicative way. Furthermore, Huang et al. (2012) also discourage the instruction of rote-learning and invite researchers to introduce new methods for solving the vital issue. They also support the integration of mobile technologies in order to learn anytime, anywhere (Huang & Chiu, 2014, cited in Yong-Ming & Yueh-Min, 2015).

As mentioned previously, the present study does not focus on general English words, but it focuses on the development of EAP. EAP, according to Hinkel (2011), has emerged out of the broader field of English for Specific Purposes (ESP). The focus of EAP is on teaching English primarily to facilitate learners' study or research through the medium of English (Flowerdew & Peacock, 2001; Hayland & Hamp-Lyons, 2002, cited in Hinkel, 2011). In the same book, Hinkel also sheds light on the fact that EAP assessment is believed to be the least developed area in English language teaching due to the lack of creativity in assessment and overlooking students' needs. Similarly, the EAP instructors may lack competence and expertise in creating strategies and approaches that could facilitate the development of vocabulary, whether it is through the integration of technology or applying traditional teaching approaches. This statement is further supported by Fang, Schleppegrell and Cox (2006) and Zwiers (2007, cited in Dalton & Grisham, 2011), where they state that one particular concern to educators is the development of academic language. They state that although people learn oral language that enables them to speak to one another fairly easily, learning academic language is more complex because it involves abstract literacy tasks and language not customarily used in oral speech. In the same article, Solomon and Rhodes (1995) further confirm that academic language is a second language, because all literate people must learn it to enable them to access academic content. Therefore, students' interests in words and self-efficacy need to be stimulated.

Studies conducted in the pre-smartphone era have also reported positive outcomes when incorporating mobile vocabulary learning that promotes learning, as well as facilitating a

seamless ubiquitous learning environment (Song & Fox, 2008, cited in Godwin-Jones, 2011) because of the flexible and effective learning mode for English vocabulary learning with a focus on the individual learner's vocabulary ability (Chen & Chung, 2008). The use of text-messaging for bite-size vocabulary learning as well as the integration of other forms of adaptive systems (PDAs) have also been praised for improved vocabulary knowledge in Lu (2008) and Chen and Li (2010, cited in Macaro, Hendley & Walter, 2012). Similarly, basic mobile telephones used for simple text-messaging and other educational purposes have proven to be effective in many Asian and African countries (Pegrum, 2014). The aim of the present study is not only to effectively incorporate the use of smartphones in vocabulary development but also to focus on successful methods and techniques used before the arrival of smartphones while adding new features and functions that could not be added previously with basic mobile telephones.

2.7.2. Studies supporting EAP and academic vocabulary development

Vocabulary learning is an essential aspect of learning a language and the major issue most EFL and ESL students face is how to increase and develop their vocabulary to an extent at which they become able to read English texts fluently and extensively (Fisher et al., 2012). The biggest part of literature on vocabulary learning unanimously agrees and indicates that a significant branch of language learning in developing proficiency among non-English speakers is vocabulary skills. It is the mastery of vocabulary that may lead to better comprehension that subsequently leads to enhanced language acquisition (Ahmad et al., 2013). Furthermore, a good vocabulary is a requirement for proficiency and competence, since fluent speaking and effective writing are facilitated by word power as well as the overall enrichment of the learner's language skills such as listening, speaking, reading and writing (Kenny, 2011).

Moving on from the importance of vocabulary knowledge to 'how to improve and develop', Tabatabaei and Goojani (2012) believe that language learners, who usually face the challenge of vocabulary learning, should be encouraged to become independent learners and allay the burden. This could be made possible and achievable through instructing the learners to incorporate the use of their mobile telephones and perceive it as an efficient tool to learn vocabulary. Tabatabaei and Goojani further claim that researchers should seek new ways of

enhancing the learning of vocabulary which plays a vital role in EFL/ESL contexts as well as developing language competence (Nation, 2001; Laufer, 1998, cited in Tabatabaei & Goojani, 2012). After all, it is the knowledge of vocabulary that contributes to the academic success of L2 learners (Morris & Cobb, 2004) and correlates significantly with academic grades across subjects.

Moreover, to Nikopour and Kazemi (2014), vocabulary acquisition can easily be practiced outside the classroom in comparison to other language skills and components. An EFL/ESL learner's general proficiency is normally based on this fundamental part, which is vocabulary knowledge. It is the lack of enhanced vocabulary which subsequently affects the quality of learners' productive skills such as writing and speaking. Similarly, the limited knowledge of vocabulary items could also impede the learners' reading and listening comprehension. It constitutes an important aspect of language development, where there is an extensive body of literature for investigating the impact of instructional technology in vocabulary development such as CALL and Mobile Assisted Vocabulary Learning (MAVL) (e.g. Brown, 2008; Shih, 2007; Stockwell, 2008, cited in Nikopour & Kazemi, 2014). Table 2.14 offers a summary of studies supporting EAP and academic vocabulary development.

Summary of studies supporting EAP and academic vocabulary development	
Fisher et al. (2012)	EFL and ESL students experience the challenge in the language fluency
Ahmad et al. (2013)	The mastery of vocabulary leads to better comprehension; this leads to enhanced language acquisition
Kenny (2011)	Vocabulary is a necessity in language fluency
Tabatabaei and Goojani (2012)	Independent learning is necessary for second language learners
Morris and Cobb (2004)	The knowledge of vocabulary contributes to the academic success of L2 learners
Nikopour and Kazemi (2014)	Vocabulary easily acquired outside the classroom

Table 2.14 Summary of studies supporting EAP and academic vocabulary development

2.7.3. Studies refuting EAP and academic vocabulary development

As mentioned previously, knowledge of vocabulary is the foundation for any foreign language and the base for building other skill components of a language. It is, therefore, extremely unlikely to find in the literature any source that would refute the teaching of vocabulary skills. However, researchers have argued against "instruction" and methods for teaching vocabulary items. Some researchers believe that direct instruction (memorisation and/or rote-learning) is generally recommended for learning the most common words and incidental learning is recommended to increase vocabulary beyond the basic 2,000 or 3,000 words (Nation, 2001, cited in Fisher et al., 2012). Other researchers might recommend out-of-class reading and to access materials, on the web or from the library. This approach could be perceived less favourably by the mobile generation, who show little interest in paper-forms (Fisher et al., 2012). One of the major problems for vocabulary building is time constraint. If language classes only run for a few hours per week and most of the in-class time is spent on other tasks and activities, the learners might struggle to improve the knowledge of their vocabulary. The present study refutes the idea of the quick ten-minutes pre-teaching vocabulary sessions that usually take place in the classroom, and chooses not to implement more traditional approaches, but supports the idea of outside-the-classroom vocabulary development in learners' own time, own place and on their own devices as summarised in Table 2.15.

Summary of the study refuting EAP and academic vocabulary development	
Nation (2001) cited by Fisher et al. (2012)	Direct instruction (memorisation and/or rote-learning) is generally recommended for learning the most common words

Table 2.15 Summary of the study refuting EAP and academic vocabulary development

2.7.4. Evidence-deficiency/gap in EAP and academic vocabulary development

So far, this section of the literature review has discussed how important vocabulary knowledge is in language learning. Previous researchers have stated how vocabulary

instruction is neglected in language teaching (Carter, 1987) and why it is important to place vocabulary instruction at the top of the agenda for language teachers (Oxford & Crookall, 1990). Recent studies, on the other hand, might not have been wholly successful at rectifying the situation for vocabulary instruction, but they are more concerned with integrating new approaches and methods that could hopefully provide practice opportunities that both teachers and learners will willingly embrace. The more traditional textbooks and word-lists that learners used to have for vocabulary learning may have been replaced by MALL. The question, however, is not about the tools, but whether the tools are effective and whether MALL can be an answer to address lack of vocabulary knowledge (Ballance, 2012).

2.7.5. How the present study will contribute to the knowledge gap

The EAP words in the present study are provided to learners via smartphone messages. Although Nation (2005) believes that deliberate teaching of vocabulary items is the least efficient way for vocabulary knowledge, nonetheless, it is an essential part of a well-balanced vocabulary programme. In order to tackle the problem of learning, only a few words and a small part of what is required at a time, and not being able to deal with every part of what is required to know in a word, the present study assimilates Nation's (2005) study in the following respects regarding deliberate teaching of EAP words:

1. Give the meaning by: using a known L2 synonym or a simple definition in the L2, showing an object or picture, breaking the word into parts and giving the meaning of the parts and the whole word (the word part strategy), giving several example sentences with the word in context to show the meaning.

2. Draw attention to the form of the word by: showing how the spelling of the word is like the spelling of known words, giving the stress pattern of the word and its pronunciation, showing the prefix, stem and suffix that make up the word.

3. Draw attention to the use of the word by: quickly showing the grammatical pattern the word fits into (countable/uncountable, transitive/intransitive, etc.), giving a few similar collocates, giving a well-known opposite, or a well-known word describing the group or lexical set it fits into.

Nation's (2005) techniques are applied in the present study, but through a modern, informal, out-of-class, social and ubiquitous approach with smartphones and socialising applications. It is intended that this approach puts emphasis on continuity, spontaneity of access and gives the learners a strong sense of learning community (Duman, 2014). The use of smartphones seeks to create learning communities where members are separated by distance but empower collaborative as well as communicative learning (Kukulska-Hulme & Shield, 2008). To conclude, this study is considered as a "remix" of traditional "wordlists and flashcards" techniques, where Paul Nation's vocabulary learning techniques have been reproduced, using smartphones as well as the latest smartphone applications.

2.8. Implications for the study

An implication arising from the literature review is that teachers play a crucial role in language development and they are the primary source of support for consolidating the social aspect of language learning as well as promoting inclusive approaches to language learning. In addition, mobile assisted language learning is gaining more ground and in some places is replacing computer-mediated learning which has conventionally been the basis for technology integration into learning. Existing studies have shown that researchers will always need to consider how practice is embracing new innovations and techniques for learning and teaching with technology. Since technology, and mobile telephones in particular, are in a constant state of development and updating, and introduce their users to the latest advanced features, there will always be a gap in the literature of teaching and learning with mobile telephones. The current study, therefore, focuses on presenting the data and results to fill a gap on previously unavailable features of mobile telephones, since at the time of their exploration, the current research was based on the previously out-dated features that did not necessarily resonate with the current learning environment. For example, current literature offers limited research emphasis on the implementation of apps and smartphones, as most of the currently available advanced features had not been available in previous years. Hence, presenting findings on smartphones' and apps' effectiveness will benefit this area of research by explaining and developing frameworks on how the apps can be designed to improve efficiency in language teaching, especially vocabulary teaching in ESL.

2.9. Conclusion

The aim of the present study is not only to discuss how effective technology integration or smartphone incorporation can be used in vocabulary learning, but also to review and relate to literature that discusses whether technology should be used as an extension to the traditional methods or as a substitute. Similarly, regardless of the advancement and constant update in technological devices, the tools may never replace the teachers and the teachers will always be required to employ the initial scaffolding in language learning. This study aims at elucidating whether and how language teachers do not have to be experts at technology to incorporate smartphones, just as the developers of technology do not possess much knowledge of language teaching and learning. The simplest method of lesson delivery via smartphones could be SMS or MMS. This approach has been used in previous decades and reported to be effective on many occasions. The social aspects discussed earlier and the learning communities bring a new learning experience, where learners are not only able to use the modern teaching-learning approaches with smartphones, but they are also able to utilise and adopt their unique learning approaches within their individual learning spaces. With regard to messaging the target language to the learning community, previous studies that explore implications and future directions in investigating how mobile telephones and text-messaging can be used in everyday life in order to develop a more authentic learning task, this study will aim to show that the learning tool can be carried in the pocket (Kiernan & Aizawa, 2004) and aid seamless learning with smooth transitions between in-class and outside-class learning (Uosaki, Ogata & Mouri, 2015).

2.9.1. Major studies

Since the introduction of mobile telephones in the early 1950s in Europe, the United States and Japan (Dunnewijk & Hulten, 2007), much has changed and developed, that has moved mobile telephones into smartphones, with latest technological features, making them an inseparable part of many people's everyday lives. The advancement of these tools will not cease, not in terms of exploring developments in everyday use such as calling, messaging, shopping and socialising, but also in terms of features that educators use and developers focus on to upgrade to the latest versions, meeting educational requirements. From research studies reviewed, the majority of teachers and learners perceive these tools positively and are eager to

embrace the latest versions of educational apps that can be introduced in teaching and learning for use both inside and outside the classroom, making technology 'an integral part of the teaching and learning process and not a discreet activity to be undertaken in isolation of the rest of the learning' (Dudeney & Hockly, 2007).

2.9.2. Supporting studies

While nearly 80% of the studies reviewed report positive results about the learning outcomes of MALL implementation (Burston, 2014), studies also claim that MALL may not substitute the traditional ways of learning, but it can be a useful addition (Azar & Nasiri, 2014; Pfanner, 2012). There is substantial support for the integration of mobile photograph-taking that confirms the positive findings of other scholars (Wong, 2012; Wong et al., 2010; Wong & Looi, 2010) and may improve learners' phrase ability in the long-term (Chen & Lui, 2015). Moreover, the combination of multiple forms of media such as visual representations, sounds or pronunciation, text and video can also assist vocabulary learning and facilitate reading comprehension (Chun & Plass, 1996, 1997; Lomicka, 1998, cited in Wu, 2014). Table 2.16 offers a summary in conclusion (of supporting studies).

Summary in conclusion (supporting studies)	
Burston (2014)	MALL attributed to positive outcomes
Azar and Nasiri (2014); Pfanner (2012)	MALL does not substitute traditional learning but a good addition
Wong, (2012); Wong et al. (2010); Wong and Looi (2010)	Mobile photo taking supports learning
Chen and Lui (2015)	MALL improves phrase ability of the learners
Chun and Plass (1996, 1997); Lomicka (1998) cited by Wu (2014)	

Table 2.16 Summary in conclusion (supporting studies)

2.9.3. Refuting studies

The majority of less successful outcomes reported in studies are often the result of trying to make technology an absolute answer. It is the "excessive gadgetisation" often plaguing the language training industry, instead of employing the potential of these new technologies to create integrated and sustainable training systems where technology enhances, rather than depreciates, the role of the trainer and the effectiveness of language learning (Wickham, 2014). MALL cannot be a 'one solution fits all' in language teaching and learning, but it can be an extension for learning in new environments. While the majority of limitations and challenges reported in previous studies, such as the lack of video and voice chat ability (Miangah & Nezarat, 2012), have been mostly dealt with through on-going development, with the invention of the latest models, MALL may not be appropriate for all kinds of learning content and activities (Gay et al., 2001).

Activities such as vocabulary learning with MALL in some previous studies have failed to deliver expected results. Lack of significant differences between traditional and digitised MALL approaches (Nikopour & Kazemi, 2014) because of limited internet access, have been reported. Moreover, educators need to consider how well the learning process is supported and augmented by technology, not consider just the use of the technology itself (Crismond, 2012). Crismond claims that occasionally ignored factors when incorporating technology are: overlooking the different speed of learning for different students; making sure that learners' needs are met and they are making equal progress; trying to fit the outliers in the community who do not seem to fit and are not willing to participate fully; the technique for drawing all students into the learning sphere; and trying to motivate the reluctant participants (p. 134). Table 2.17 offers a summary in conclusion (of refuting studies).

Summary in conclusion (refuting studies)	
Wickham (2014)	New technologies create integrated and sustainable training
Miangah and Nezarat (2012)	Majority of limitations addressed in the previous studies
Gay et al. (2001)	MALL not appropriate to all learning content

	and activities
Nikopour and Kazemi (2014)	Lack of significant differences between traditional and MALL digital assisted learning
Crismond (2012)	The need to understand how learning is augmented by technology

Table 2.17 Summary in conclusion (refuting studies)

2.9.4. What is missing?

The field of MALL is theoretically immature, with minimal cumulative research available. There is a lack of empirical studies that could provide support on the effectiveness of MALL for individual language learning. In terms of data collection, there is a need for long-term studies and studies involving larger groups (Viberg & Gronlund, 2013). MALL or m-learning is a theoretically young field and observation of the real-world experiences is required for enhanced insight both theoretically and practically (Pegrum, 2014). More experimental studies are required on various aspects of language learning, for example, in reading comprehension, pronunciation performance, writing process and grammar acquisition (Viberg & Gronlund, 2013). The majority of technical and functional problems of mobile telephones stated up to 2015 have already been resolved, such as the screen size, keyboard and lack of network coverage (Bozdogan, 2015). But, in terms of research methods and data collection methods, more theoretical grounded work is required which could combine both quantitative and qualitative approaches. In terms of data collection tools, it is equally important to include interviews or learning behaviour observations that could be used as evidence to support MALL in future research (Chen & Lui, 2015).

2.9.5. How my study relates to previous research

In the present study, words are not sent to smartphones as plain, dull text messages with definitions. They are sent as multimedia messages which also assimilate flashcards. Flashcard

use has been popular for many years and their effectiveness is confirmed in older studies as well (Tan & Nicholson, 1997; Stutz, 1992, cited in Nikopour & Kazemi, 2014) for their 'fun and ease of use' factor. When flashcards are sent to learners' personal devices, outside-the-classroom learning can take place and learners are able to access them when needed (Fotouhi-Ghazvini, Earnshaw & Haji-Esmaeili, 2009). Outside-the-classroom learning should not just encourage visual forms of communication and learning while moving learners away from verbal forms of communication, which is not ideal for foreign language learners (Kiernan & Aizawa, 2004), but instead, the present study will allow for more in-class time for oral language learning such as speaking and discussion, by using the time spent on pre-teaching vocabulary outside the classroom.

The present study will relate to Nation's (2005) study regarding vocabulary acquisition in the pre-smartphone era in a range of ways, taking on board a number of key principles:

- Vocabulary exercises are carefully prepared in advance
- Learners can learn from each other in small groups (Viber, WhatsApp, Telegram and Facebook Messenger groups)
- Vocabulary items need to be met and met again (can be met in textbooks in the classroom, as words are taken from the course book, and saved on devices for future encounters)
- Student-centred approaches should go beyond rote-memorisation

To conclude, vocabulary knowledge will always lie at the heart of content learning. It is the foundation for the comprehension of all other skills in language learning. Just like all learning is believed to be social, vocabulary instruction also needs to be based on interaction between the teacher and the learner(s). Acquiring the knowledge of vocabulary should not be an isolated skill, but aid learners to become effective readers, effective writers, effective speakers and effective listeners in order to comprehend and convey coherent messages (Frey & Fisher, 2014).

Chapter three: Methodology

3.1. Introduction

The present study investigates the use of two types of smartphone applications in vocabulary development of EFL learners. The motive for conducting the present study was assigned after conducting professional intervention in previous years in the same way, which delivered satisfactory outcomes. The professional intervention was discussed in detail in section 1.2 of the Introduction chapter. My position as an insider-researcher, familiar with the challenges of second language learners, especially the integration of mobile telephones in learning, led me to anticipate one of the challenges of implementing MALL to improve vocabulary or language learning. The study was implemented from an insider research perspective, which has become an area of attention due to the exponential growth of small-scale practitioner research in education (Mercer, 2007). For insiders, they are members of a specific group and occupants of specific social statuses. In addition, an insider entails being a member of a group whose biography, sexual orientation, race, class and gender gives them the familiarity within the group being researched. For this case, the role as an insider researcher involved being specifically a member of a group within a social context (school environment or context) and, as a teacher, the researcher was familiar with the demographic characteristics of the students including the problems they had been facing in their learning. Similarly, the relationship between the researcher and the participants was an "intimate" insider researcher, as the teacher had known much about a lot of the students in the institution, having previously interacted with the students from different classes, contexts and different levels of learning.

According to Mercer (2007), there are certain advantages and some disadvantages in insider research, in terms of 'access', 'intrusiveness', 'familiarity' and 'rapport'. To begin with, one of the advantages includes **"access"** to the research site, which may lead to easy access granted to the researcher, and the process of collecting the data can be merely less time-consuming (Mercer, 2007). For this study, for instance, there was no expense or cost in travelling for interviewing or disseminating the questionnaires to the students (the researcher's own students and own classroom). However, being at the site of the research is equally "all-consuming", because there is the need to be present at the research site on a five-

day basis. Not only did this involve five-days on a work basis, but additional time consumed outside the classroom (sending new words as multimedia messages). With regard to **"intrusiveness"**, the advantages are that students receive additional language support outside the classroom, which could be a necessity for developing their academic vocabulary items. The disadvantages, though, include extra learning burden on top of their required and expected progress in the pre-sessional course. The additional learning load and time constraints have also been the primary reasons for the majority of the participants, who had initially volunteered to take part in the study, dropping out of the study.

Concerning **"familiarity",** there is the chance of the insider having better comprehension of the specific social setting since they have interacted with the context, know the diffuse and subtle links between events and situations, and also the opportunity of assessing the implications of using or selecting specific sites or venues for inquiry (Mercer, 2007). In this case, the researcher, as the teacher, understood the problems that foreign students experienced in the institution with regards to English language and also how the collaborative and interactive learning outside the classroom context might lead to better outcomes of vocabulary learning. However, the limitation with the higher familiarity is whether it can lead to greater credibility (Mercer, 2007). The greater familiarity with the research site, as an insider researcher, could have led to the researcher taking things for granted, developing myopia, and assuming that their unique and own perspective is better and far more widespread than the actual case. Lastly, as far as **"rapport"** is concerned, the main advantage has been creating a friendly and informal rapport with the learners/participants and being able to build enough trust to be able to exchange contact details when joining socialising groups in order to receive the daily messages that contained new vocabulary items. At the same time, however, some participants were not willing to share their contact details with other group members in the socialising apps and requested a one-to-one interaction with the researcher. The rapport with other group members, therefore, was not as strong and trustworthy as with the researcher.

Furthermore, the use of insider-led research in work-based projects is usually criticised by research traditions for its subjective nature, where one's own practice is researched and could possibly be lacking impartiality and high personal interest in certain outcomes and results (Costley, Elliott & Gibbs, 2010). At the same time, criticism may prove to be valuable in discussions about research, which is why it is important to give careful attention to the data being gathered by the insider, especially questions related to validity and insider bias (Murray & Lawrence, 2000, cited in Costley, Elliott & Gibbs, 2010). However, Costley, Elliott

and Gibbs (2010) also believe that in order to guard against bias in the work, there are steps that an insider can take. For instance, 'careful attention to feedback from participants, initial evaluation of data, triangulation in the methods of gathering data and an awareness of the issues represented in the project' may prove helpful when it comes to defending work-based projects.

Following data collection, throughout this project, Meyer (2001) is used as a guide for the data analysis process (pp.329-352). The process includes stages in which chronology, coding, and data recording is used to analyse data according to themes and issues. As can be seen in Figure 3.1, each stage is preceded by a pre-test and is followed by a post-test assessment. Preparation for Stage 1 began on 4/7/17. In preparation for Stage 1, questionnaires were distributed, the researcher's logbook recording began, pre-test for Stage 1 was taken and the Stage 1 vocabulary learning application was installed. In addition, participants were also instructed to keep diaries. On 5/8/17, post-test assessment marked the end of Stage 1.

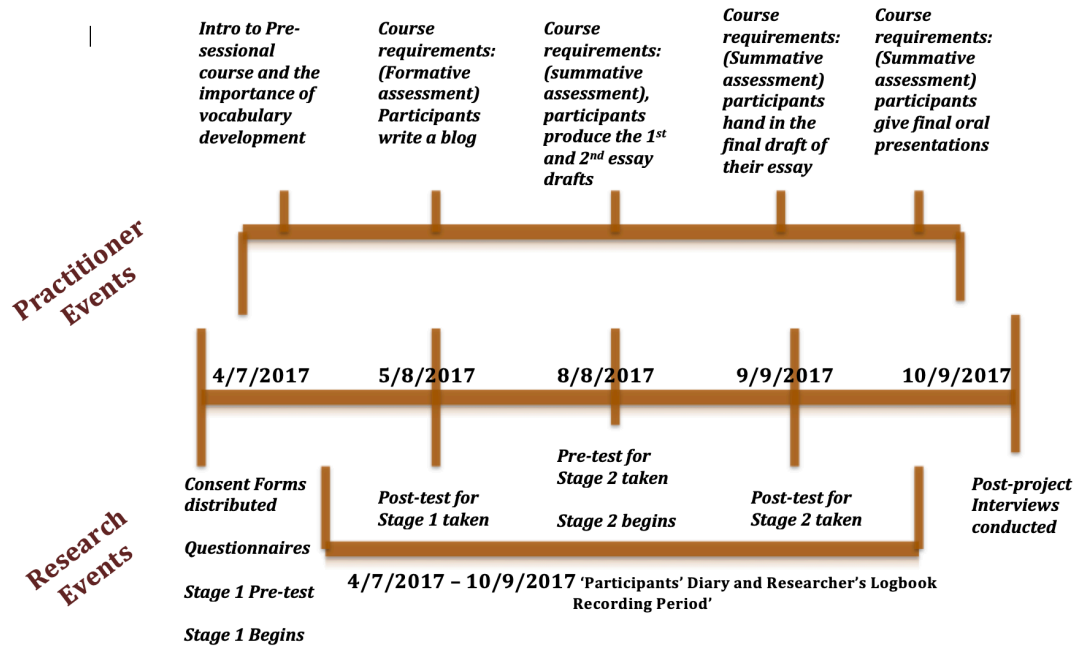


Figure 3.1 Data collection stages

Likewise, Stage 2 preparation began with a pre-test and creation of socialisation groups which were planned to start on 8/8/17. Stage 2 was followed by a post-test assessment on 9/9/17. Project completion interviews planned on 10/9/17 marked the end of the study. The

participant background check was the starting phase for the analysis, with comparison of results from the Stage 1 and Stage 2 assessments and pre-tests marking the next phase. Following that, results from interview questions and data from participants' diaries were used to shed light on the results from the two pre-tests and post-test assessment analysis. The open-coding for the interviews is presented in chapter 4 of the present study. Notes from the researcher's log book were also used for further analysis. These notes were analysed, further detecting similarities and variances with the data collected.

3.2. Pragmatism as a research paradigm

Pragmatism as a paradigm in the present study underpins the mixed-method approach, by providing a way of thinking about possible answers to the research questions from different perspectives and multiple realities. Pragmatism as a theoretical paradigm is supported as a philosophical approach for social research, regardless of whether quantitative, qualitative or mixed-methods are used in research. It is argued that it replaces the older philosophy of knowledge approach, such as ontology, epistemology and methodology (according to Morgan, 2014) that are briefly described here in terms of their relevance to the present study.

Ontology informed the decision for searching and exploring knowledge in this study, as the philosophical underpinning dealing with the nature of reality, or the system of belief reflecting a person's reflection on what constitutes a fact. For ontology, the present study assumed a pragmatist view that entails how factual knowledge can be gained through observation, and how measurement of such observations through qualitative data can lead to the trustworthiness of factual knowledge (Hughes & Sharrock, 2016). For this study, the ontological perspective or approach to reasoning that the researcher assumed was that pragmatism allows the exploration and identification of factual knowledge which is possible to observe and qualify or quantify, which this study did through interviews and records, as well as a pre-test and post-test approach. In addition, this study was guided by an epistemological position, which concerns the philosophical study of nature, its origin as well as the limitations to human knowledge (Hughes & Sharrock, 2016). This study assumed an empiricist approach to knowledge, which argues that human knowledge is only arrived at through experience since human senses help in knowing (Hughes & Sharrock, 2016). Hence, for this study, it was guided by a pragmatist view of knowledge gained through observation

and quantification, and that knowledge is gained through human experience, or interacting with phenomena.

In order to understand how pragmatism as a philosophy could be used as a research paradigm to solve a problem as in this research study, it is necessary to consider the work of John Dewey as a 'Concept of Inquiry as a Basis for Research' (cited in Morgan, 2014), that describes inquiry as a specific kind of experience. Dewey's systematic approach to inquiry involved five steps undertaken in addressing the problem that needed examining and resolving through actions. These are stated here, alongside actions taken in the present study (with outcomes displayed in the parentheses):

1. Recognising a situation as problematic (lack of academic word knowledge in undergraduate EFL students' English language).

2. Considering the difference it makes to define the problem one way rather than another (informal language support provided outside the classroom, instead of formal traditional vocabulary teaching in the classroom).

3. Developing a possible line of action as a response to the problem (creating socialising groups and sending words to the learners on a daily basis).

4. Evaluating potential actions in terms of their likely consequences (the production and recall of acquired words during activities in the classroom).

5. Taking actions that are felt to be likely to address the problematic situation (implementation of professional intervention that prepared the grounds for the main study and supporting satisfactory outcomes).

3.3. Conceptual framework

The literature review in chapter 2 is concerned with technology incorporation in ELT and learning, with particular attention given to smartphone applications used for vocabulary development. An investigation that would look into whether and why students acquire more words with installed and downloaded vocabulary learning applications OR socialising and chatting applications, has led the researcher to consider identifying from the review a conceptual framework that will not only include smartphone applications' effectiveness in

vocabulary development, but will also include other individual learning approaches that are considered effective.

3.3.1. The need for a conceptual framework

The 'Next generation mobile Second Language Learning (SLL) apps' theory as a framework posits that time, place and activity type, considered key factors in the design of MALL apps, should also be considered in the initial steps towards a systematic analysis of similar frameworks for assessing the development or uses of similar apps in the future. Consequently, Kukulska-Hulme (2012) argues that in order to systematise their design, mobile apps for SLL require the development and adaptation of a conceptual framework, based on spatial and temporal characteristics of mobile learning scenarios, where questions pertinent to mobile SLL apps are answered (see 'Next generation mobile SLL app' in Figure 3.2). These questions may be asked prior to developing the app and perhaps answered by the students or users after the app is developed and implemented.

This form of framework would appear to be particularly relevant in the current study. However, in a more recent framework, Kukulska-Hulme is concerned about more than just the adequacy of applying a temporal-spatial-activity-based-conceptual-framework for the next generation of MALL SLL apps (discussed in the sub-section following).

Next generation designs		
	Time	• Specific time or anytime? • Routine or spontaneous? • Instant access or leisurely? • How much available time? • Dependent on sufficient time? • Interruptible?
	Place	• Specific location or anywhere? • Private or public place? • Relaxing, energising? • Stationary or moving? • Walking, running? • Driver or passenger?
	Activity	• Challenging or easy? • Suitable for multitasking? • Receptive or productive? • Involves speaking aloud? • Writing or gestures? • Individual or social?

Figure 3.2 Next generation mobile SLL apps

3.3.2. A pedagogical framework for mobile assisted language teaching and learning

In her updated pedagogical framework, which is driven by her 'Next generation mobile SLL apps, 2012' framework on time, place and activity, Kukulska-Hulme (2015) has focused mainly on how the 'activity' exploits certain aspects, as well as focusing on the following:

- Learning beyond the classroom
- Inspired by learners' own practice
- Guidance for teachers: app selection and mobile activity design

Furthermore, she believes that the activity should start with students' prior learning practice and experiences. The activities should not only support individual learning needs but also incorporate the learning in students' daily lives while helping them define their learning goals, engage with other students' goals, and learn in collaboration. As can be seen in Figure 3.3, the framework offers a clear understanding of suggested mobile learning opportunities such as actions (feeding back after tasks or class-learning-oriented-assessment), or another activity (the 'ideal self' language user who would reflect on learning and motivation that usually results in encouraging learners to be more active and reflect on real language performance).

In summary, the pedagogical framework for mobile assisted language teaching and learning by Kukulska-Hulme (2015) highlights the use of activities that are crucial to a dynamic language and technology environment while encompassing the distinctive capabilities of teachers and learners. The framework is based on four connecting concepts: inquiry; outcomes; reflection; and rehearsal (further elaborated later). These concepts are subsequently linked to four major aspects: teacher wisdom; device features; learners' mobilities; and language dynamics.

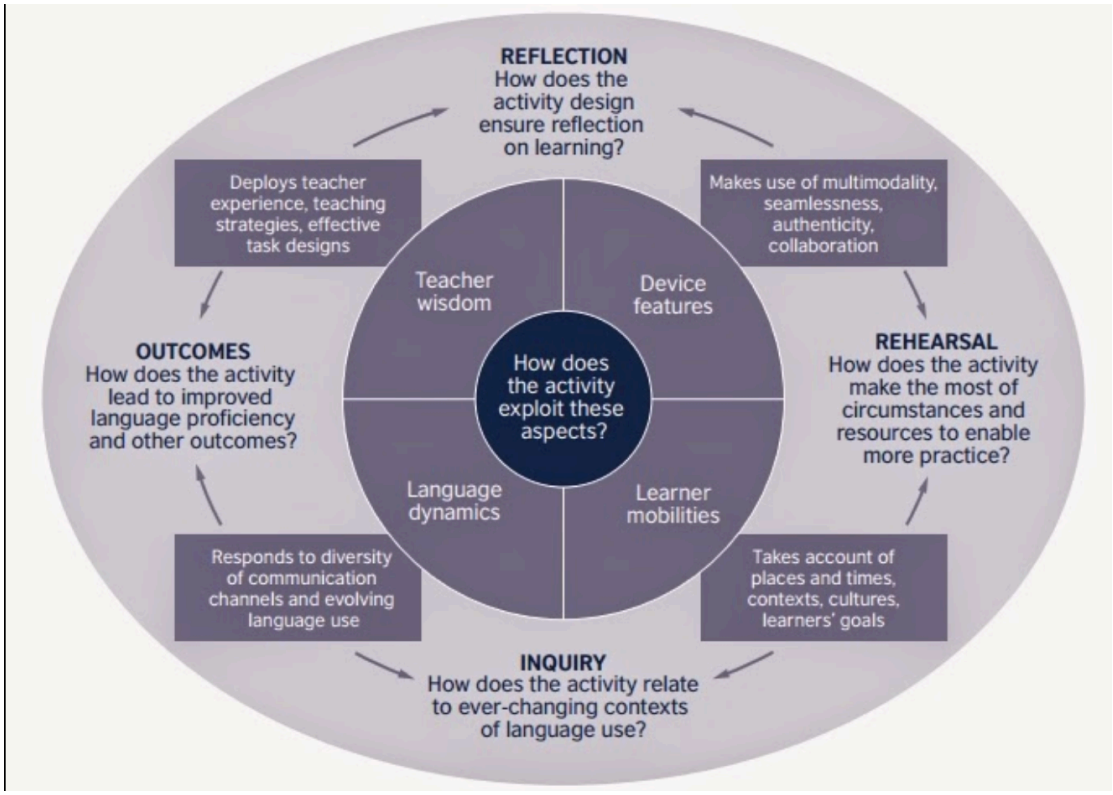


Figure 3.3 Kukulska-Hulme's pedagogical framework for mobile assisted language teaching and learning

This pedagogical framework is used consistently throughout the present study. For instance, during the data collection stage, the framework is used in order to find out if activities incorporated in the study (the incorporation of smartphone applications) exploit the four main aspects stated in the framework as: 'Teacher Wisdom'; 'Device Features'; 'Language Dynamics'; and 'Learner Mobilities'. 'Teacher Wisdom' according to the framework is about the deployment of teacher experience, teaching strategies and effective task designs. In the present study, the strategies are based on the selection of smartphone applications and if they are effective in developing the learners' vocabulary knowledge. The 'Device Feature' aspect is used in the data collection stage when shaping the data collection instrument questions and is considered when exploring whether learning with one type of application is more effective in comparison with another type of application used. As far as 'Learner Mobilities' are concerned, the data collection questions ask if the use of apps in different places, at different times, contexts and cultures has helped the learners succeed in their learning goals. The 'Device Feature' aspect is further researched in the data presentation chapter of the study, inquiring if the multimodality, seamlessness, authenticity and collaborative qualities of smartphone applications used in the study have been effective.

The Discussion chapter, additionally, not only discusses all four aforementioned aspects and how they are exploited by activities (the use of smartphone apps), but particular attention is paid to the 'Language Dynamics' aspect and how language has evolved using different approaches instructed by the researcher, as well as learners' own approaches used for the development of their language. In sum, the Discussion and parts of the Conclusion chapters have shed light on the four major concepts (initially linked to the four main aspects of the framework) and their relevance to the present study:

- Inquiry (how to effectively incorporate smartphone applications for vocabulary development)
- Rehearsal (the regular exposure and practice enabled through socialising and installed applications)
- Reflection (how vocabulary development is reflected using different types of vocabulary development applications)
- Outcomes (the type of application that has resulted in an improved vocabulary)

The aspects and concepts mentioned in Kukulska-Hulme's pedagogical framework have subsequently assisted the researcher in designing her own conceptual framework for vocabulary development for English language learners (displayed and discussed in Chapter five).

3.4. Methodology

A research methodology, as this study considers, is the approach to the processes as well as the methods that are used to achieve aims and objectives of a study (Bryman, 2012). It was imperative for the study to narrow down across the range of quantitative and qualitative research approaches, whereby the former entails measuring numerical variables while the latter involves measuring qualitative constructs (Bryman, 2012). A combination of qualitative and quantitative approaches was suitable for this study since they sought to find out the variables within the study area, in the form of attributes, numbers or percentages, opinions and views from a particular social group (Bryman, 2012). In the same way, the mixture of both approaches explored the evidence supporting the effectiveness of smartphone applications, especially their contribution to the learning of EFL. These two

approaches are not in opposition to one another, but can complement each other as stated by Thomas (2013). Likewise, Achilleos and Jarvis (2013) view the combined qualitative and quantitative techniques not as polar opposites or dichotomies, but rather as representing two ends on a continuum. The mixed-methods approach in their study is also favoured for its "attempts to consider multiple viewpoints, perspectives, positions and standpoints" (Johnson et al., 2007, cited in ibid). Similarly, in their study based on transforming the learning experience, Kirkwood and Price (2014, p.14) have also categorised quantitative change in learning as: increased engagement or time-on-task; students achieving improved test scores or assessment grades; and qualitative change in learning as: promoting reflection on learning and practice; deeper engagement; and richer understanding.

There are a number of software and data analysis programmes used for both qualitative and quantitative analysis that are available and can be used, depending on the amount of data the researcher has to process. However, with 20 participants, 20 questions in the questionnaires, less than 20 questions in the post-project interviews, and only a handful of notes in the diaries, in the present study, the use of data analysis software was not regarded as being necessary. Similarly, the present study takes the liberty to present and analyse the qualitative data by interpreting the findings that also abide by the principles of 'fitness for purpose' as mentioned in Cohen, Manion and Morrison (2011) and aims to discover commonalities, similarities and differences. Therefore, the software and data analysis programmes such as CAQDAS, NVivo, Atlas.ti and others may not substitute for the intelligent reading of the data, where only a pen, paper, highlighter and a brain were required (Thomas, 2013).

With regard to the qualitative element, it was anticipated that there would be the opportunity to engage in in-depth analysis of the subject, thus the chance to gain in-depth, reliable and valid study results (Creswell, 2012). The flexibility of a qualitative approach and the data collected from a human experience through the diaries and one-to-one semi-structured interviews were other reasons for choosing this approach. Moreover, the different practices in qualitative approach made the world visible in a different way, establishing a commitment to using more than one interpretive practice (Denzin & Lincoln, 2013). The quantitative data, on the other hand, were based on the closed-ended and open-ended questions from the pre-study questionnaires as well as the pre- and post-tests, the number of words learnt or the level of achievement made through both types of applications. While the qualitative data not only elaborated on why a certain level of achievement had been attained, they also discussed barriers, limitations and/or reasons for the lack of achievement in both cases.

However, a qualitative approach is not free from limitations, especially the possibility of biases, because the findings depend on the researcher's interpretation despite the necessity to be available during the data collection which requires much time, and dedication (Bryman, 2012). Therefore, both quantitative (numeric trends) and qualitative (detailed views) methods, as described by Creswell (2009, p.123), are used to strengthen the findings and offset any weaknesses that might possibly occur by using only one method (Creswell, 2012) as well as gather information to generalise results as far as possible about the effectiveness of the two types of applications. These forms of data allowed for an in-depth exploration of each type of application used in the study and why participants performed better in one particular stage of the study, and not in the other stage.

3.4.1. Overview

The methodology is based on a case study approach, with a view to providing an analysis of the context and processes involved in the phenomenon under study (Meyer, 2001) as well as an in-depth exploration from multiple perspectives of the complexity and uniqueness in a real-life context (Simons, 2009, cited in Thomas, 2011). Moreover, in order to focus on one (or just a few) instances of a particular phenomenon, with a view to providing an in-depth account of events, relationships, experiences or processes in that particular instance (Denscombe, 2007), a case study method has been selected. A case study is specifically used when studying a particular case within its natural context because the boundaries between the 'phenomenon' and 'context' are difficult to define, or because we are actually interested in how the context influences the phenomenon (Thomas, 2011). In this case, the emphasis was to show how the current practices revolve around smartphone apps (being used in communication, networking and how they can apply in education or teaching of English language to foreign or second language learners). Therefore, the interest of the exploration was how smartphones can be used within the context of learning English language, especially for second language learners.

There are different types of case studies. For example, explanatory case studies are directed at explaining a question or even a phenomenon under study (Thomas, 2011). Also, there are exploratory case studies, usually for large-scale projects, proving a point that further

exploration or investigation is needed for a particular phenomenon or research area. Finally, there are multiple case studies, where information from different studies are applied in formulating a case for a specific study (Meyer, 2001). The advantage with the multiple case studies is that additional information is provided without the need of spending more time or money on additional studies (Denscombe, 2007). For this study, the overall emphasis was on how students can gain vocabulary knowledge through MALL. Therefore, it was an instrumental case study approach, which in most cases, entails gaining an insight into a specific phenomenon (Alasuutari, Bickman, & Brannen, 2008). It suits this study because, although the emphasis will be on teacher and students, the real area of exploration is how smartphones can be used to improve language learning (improving vocabulary).

3.4.2. Choosing the methodology

The initial plan for conducting the study was 'Action Research'. The rationale for doing so was that the design is applied when there is a need to improve specific practices (Somekh, 1995). Also, there were phases involved in the methodology, where subsequent phases were building on the outcomes of the previous phases, alongside iterating my own pedagogical design as a teacher. This would have involved documenting the different phases fully and logically. While the aforementioned reasons were convincing enough to opt for an action research method, the study of vocabulary development in its bounded context (pre-sessional courses) led the researcher to choose the case study approach. In addition, the boundaries between the phenomenon (vocabulary development) and the context (pre-sessional courses) were difficult to define and sometimes there was a need to understand how the context influenced the phenomenon. The case study approach was therefore suitable for emphasising that the study aimed to show how the surrounding practices influenced the use of smartphone applications and how these applications were used in a particular context, as well as examining how a range of contextual factors developed and progressed in this particular example. The success of intervention can also be evaluated by knowing the outcomes and goals of smartphone application incorporation for vocabulary development and comparing it against the results that differentiate the efficacy of different applications. The intervention not only surfaced the types of smartphone applications that proved to be more effective in comparison to a more conventional learning application, but it also highlighted other factors that were equally important (teacher involvement) and effective (personal practices) for vocabulary development.

Choosing a case study approach was also suitable based on the fact that the researcher was interested in vocabulary development within her own industry in identifying a case informative enough to be worth studying (Alasuutari, Bickman, & Brannen, 2008). A case-study approach was selected on the basis that it can contribute substantially to social sciences by offering an intense focus on cases of interests, their context and their complexity (Alasuutari, Bickman, & Brannen, 2008). Likewise, the present study seeks to make contributions to the field of vocabulary development with a particular focus on the development of vocabulary development with smartphone applications. In terms of design decisions and the selection of cases, Meyer (2001) states that case studies can involve single or multiple cases. There are certain limitations to a single case study, as a result of which Meyer suggests including more than one case study in order to obtain a deeper and richer look at each case by comparing and contrasting between the cases. This study is about how a range of smartphone applications are introduced by a teacher-researcher to support student vocabulary acquisition within the context of mobile assisted technology in English language learning for ESL learners. There is to be a specific emphasis within the case study report on how students integrated the smartphone applications into the teaching and learning practices in both formal settings and their wider lives during the study.

The suitability of a case-study method chosen in the present study was inspired by reading Cohen, Manion and Morrison (2011). The overview of key issues in planning, conducting and reporting in their view assimilates the methods in the present study through the following points:

- A case-study provides a unique example of real people in real situations *(real EFL learners attending real pre-sessional courses with a real need for developing their English for Academic Purposes (EAP) vocabulary)*
- Case-studies usually require more than one tool for data collection and many sources of evidence *(questionnaires, interviews, diaries, pre- and post-tests administered and the effectiveness of smartphone applications as well as other methods and approaches found effective in vocabulary development)*
- Case-studies can blend numerical and qualitative data *(there will be tables and charts from pre- and post-tests, illustrating the number of words known before and after the study, as well as numerical data obtained from questionnaires followed by the results obtained from the interviews and their qualitative analysis of why a certain level has been achieved in a particular case)*

- Case-studies can establish cause and effect, observing effects in a real context *(could the smartphones and smartphone applications result in increased vocabulary knowledge of EFL pre-sessional course learners?)*

There is therefore a great deal of similarity between Cohen, Manion and Morrison's (2011) perspectives and the present study regarding the selection of a case-study method. It is believed that the method is appropriate for finding out the efficacy of smartphone applications in vocabulary development.

3.4.3. Applying the methodology

Regarding the reasons for conducting the study, the primary motivation as mentioned in the 'Introduction' chapter, was having observed the lack of academic word knowledge in the researcher's EFL students' language, over the past few years. An advanced knowledge of EAP vocabulary is a necessity as well as a requirement for all EFL learners, as they will rely on the words after completing their pre-sessional course and commencing their major degree courses such as masters and bachelors. It has also been observed that some of the EFL learners are keen and willing to improve their vocabulary knowledge. They usually inquire about *'how can I learn and retain more words?'* For these motivated learners, the knowledge of the advanced and most important EAP words is not only a pressing need for their major degree courses, but it is also a confidence booster during their stay in Britain, and when they return back to their home countries at the end of their studies. In addition, the majority of the learners are expected to have mastered the knowledge of the English language upon their arrival in their home countries. Their friends and family members expect them to speak the language fluently, using enhanced vocabulary items. This could sometimes result in encouraging the learners to participate in activities similar to the one taking place in the present study, in order to receive additional support for their language development.

Moreover, for some learners, the duration of their stay in Britain is not long enough to aid them in learning the language to the desired extent. This could be the case, especially when they only stay for a year, if they are not fully immersed into the target language, live with other students from their home countries and speak their first language. For these learners, language learning only takes place for a few hours in the classroom with limited time for vocabulary development. This is due to the fact that most of the time is spent on other

activities such as reading, writing, listening and speaking, where the focus is mostly on comprehension and developing competence in these four skills, rather than developing the knowledge of vocabulary items specifically. The teacher and learners are therefore provided with one option, and that is, spending time outside the classroom on developing vocabulary knowledge while saving classroom time for the aforementioned activities.

3.5. Data collection methods and instruments

The present study has opted for triangulation, using multiple methods and data sources, which, according to Mathison (1988, cited in Pagliaro, 2010) can enhance the validity of research findings and result in effective research practice. The study analyses responses obtained from the following data collection instruments: pre- and post-tests; questionnaires (prior to commencing the study); interviews (at the end of the study); and diaries (throughout the study). The diaries could not have been controlled by the researcher, as the participants owned and kept them. However, constant reminders and encouragement were provided to the participants to keep a written record of daily, or at least weekly, learning experiences. The aforementioned instruments will be discussed in further detail in a later section, in terms of their purpose and if any challenges were encountered during the course of the study.

3.5.1. Validity and reliability

According to Kvale (1996, cited in Akerlind, 2012), there are two types of validity checks - communicative and pragmatic. Communicative validity in the present study has ensured that the data are presented holistically and the interview transcripts, diary and logbook notes are not only based on individual experiences but a group of transcripts and notes as a whole. As far as pragmatic validity is concerned, the findings from the present study will seek to provide useful knowledge to educators in the field of English language teaching - knowledge that can facilitate the effective incorporation of smartphone applications used for language development, alongside other individual learning approaches. With regard to reliability, the procedures used in this research are not only visually illustrated through a timeline, but also described in as much detail as possible. It is intended that the steps used for interpreting the data are clear, alongside sufficient examples for illustration (Guba, 1981; Sandberg, 1994, 1996; Kvale, 1996; Akerlind, 2005b, cited in Akerlind 2012).

Furthermore, the validity of the data is believed to have been increased by providing multiple perspectives (pre-tests, post-tests, questionnaires, interviews, diaries and a few notes jotted down in the researcher's logbook), the use of combined methods (quantitative and qualitative) to explore the data as well as strengthening them by the use of a mixed-methods study as a form of methodological triangulation. Using both quantitative and qualitative data collection, the findings were crossed-checked with each method type (Pagliaro, 2010). With regard to data triangulation, each set of qualitative data was analysed and compared to quantitative sets in order to confirm the findings (Denzin & Lincoln, 2005), as can be seen in Figure 3.4.

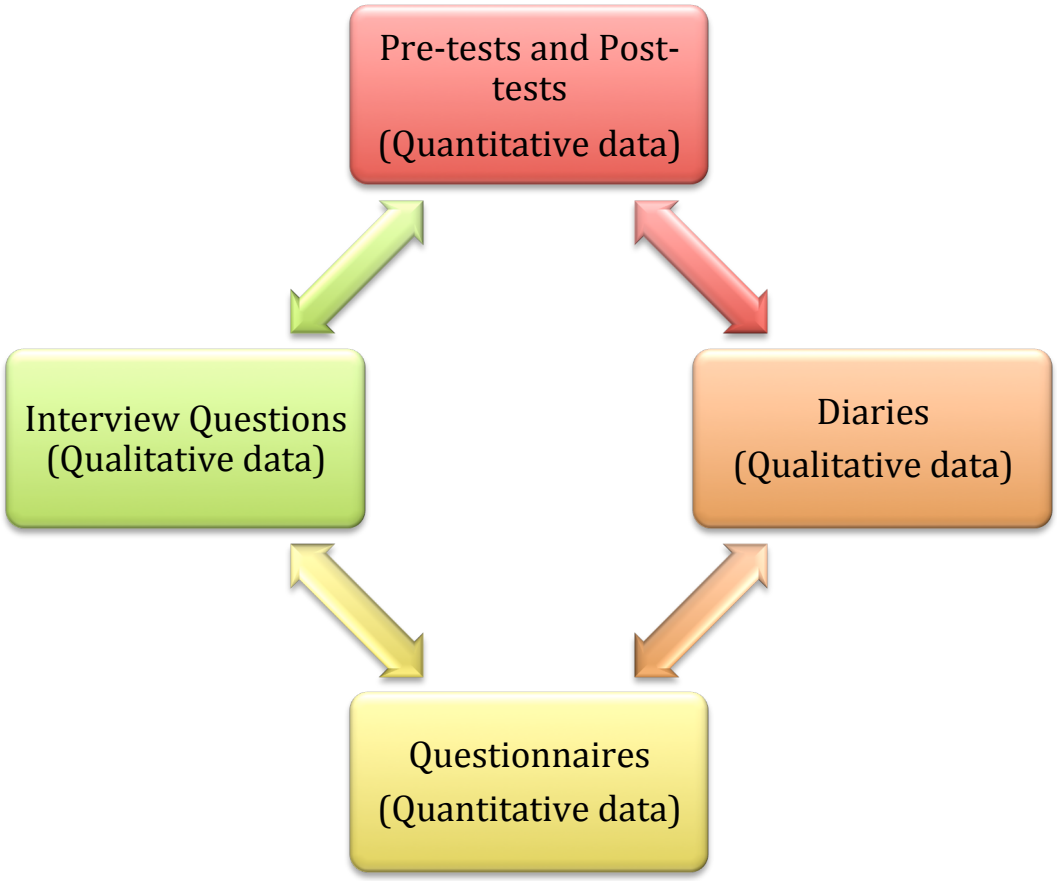


Figure 3.4 Use of qualitative and quantitative data collection

3.5.2. Overview of the data collection instruments

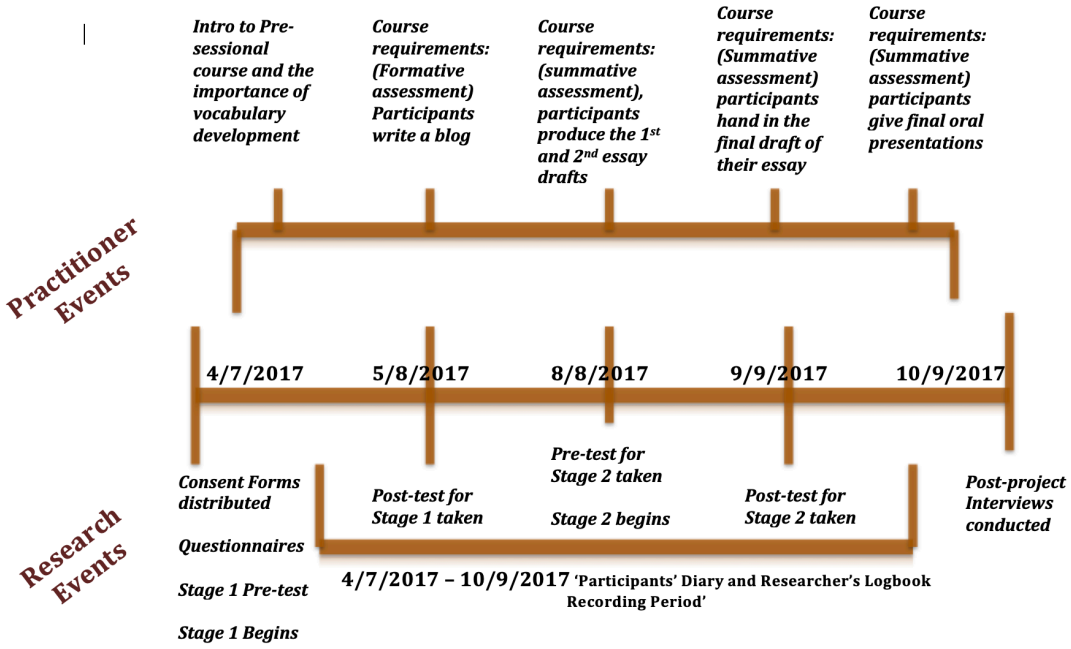


Figure 3.5 Data collection timeline

Figure 3.5 indicates the dates and order in which the research events have taken place. The timeline in Figure 3.5 (which also resembles Figure 3.1; data collection stages) focuses on research methods individually.

Questionnaires: As mentioned, a set of 30 questionnaires were distributed prior to conducting the study, in order to find out: a) the learners' experience of learning the language with smartphones and to what extent they were familiar with the integration of applications used for socialising as well as language learning; b) their preferred learning approaches for the learning and development of English language; c) any previous experience of using smartphone applications for language learning/development; d) the use of English language OR first language when using computers, smartphones or tablets; e) the use of English programmes versus other activities for English language development (Jarvis & Krashen, 2014); and f) the number of words that the participants were capable of learning on a daily basis. In light of these considerations, semi-structured closed questionnaires were designed to

guide the students and for them to navigate easily through the tool when answering the questions.

Overall, the questionnaire aimed to capture the attitudes, perceptions and familiarity with the use of smartphone applications for learning. However, as this method would collect abstract information, it was recognised that more detailed exploration (by understanding and observing student's reactions), would help in ascertaining that they had such attitudes, perceptions and opinions about smartphone use. The last question, based on the number of words that they were capable of learning, assisted the researcher in planning and deciding the number of words that were provided to the participants on every learning day. The questionnaires contained multiple-choice questions, dichotomous questions and 1-5 scale questions. Questionnaires allowed for eliciting answers that required quantification, to be used as numerical data for later analysis. While most of the questions were closed-ended, there were also open-ended questions, where the participants had the chance to further elaborate on their choices and answers in the form of comments. The questionnaires were later coded for results and analysis, and the end of this section outlines how the questionnaire aligned with the overall emphasis and direction of this study.

Interviews: The interviews were the final research tools, which were used at the end of the 10 weeks of message sending, in order to find out learners' overall experience and their opinions about the two different approaches in the two different phases. During this stage, the participants participated in semi-structured interviews which allowed the researcher to develop in-depth accounts of experiences and perceptions and to some extent helped her to produce rich empirical data about the lives and perspectives of her participants, as stated by Cousin (2009). Similarly, De Vaus (2013) defines that interviews entail collecting data by directly asking questions from the respondents, and were preferred for this study because of the ability to reach out to a broad audience with the possibility of gathering in-depth data. The type of questions included both structured and unstructured forms, that started with the main question, followed by probing and follow-up questions. Probing questions, according to Rubin and Rubin (2005, cited in Cousin, 2009), help us manage conversations by regulating the length of answers and the extent to which we obtain details. Data gathering used both note-taking and audio recording, with part of the data transcribed later for analysis.

The interviews were recorded on an audio-recorder application, installed on a smartphone. The smartphone was not only password protected, but also "pattern" protected, where the user must know and draw a pattern to unlock the application after unlocking the telephone. The

audio-files were transferred to an encrypted Box area after recording. All 20 interviews were uploaded to a software called 'Descript' for transcribing. Eighteen interviews were transcribed successfully. However, two interviews that were recorded on a different device failed to produce audio-output. Therefore, the hand-written notes recorded manually during the interviews were used as an alternative to transcripts for those two cases. The files were transcribed to text by the researcher, anonymising all identifiable information. The audio files will be destroyed after the thesis has been successfully defended. It is not intended to share the audio files to the repository; only correctly anonymised transcripts will be used. It was anticipated that the answers to the questions in the interviews and their progress report in the post-tests would answer the research questions, in terms of their attitudes towards smartphone application use in learning another language as well as its effectiveness.

The responses to these open-ended questions were then arranged into quotes, and subsequently connected to certain meaning in the context of the four concepts that were being investigated: (1) learning with technology, *installed app;* (2) learning with technology, *socialising apps;* (3) learning with traditional approaches; and (4) learning with other individually preferred approaches (see Figure 3.6). These identified quotes were later grouped and created in a *decontextualised pool of meaning,* as termed by Akerlind (2012). The only drawback of grouping was that it was not possible to locate the original interview from which the quotes were generated. It was therefore decided to use an open-coding approach where the quotes were explored and codes were assigned to the quotes. For example, the quote *'you can learn in a group, there's a sense of completion'* received the quote *'collaborative learning'*.

Another advantage of using open coding was that it enabled the researcher to perform on a *"line-by-line, phrase-by-phrase, sentence-by-sentence, paragraph-by-paragraph, or unit-of-text-by-unit-of-text"* basis (Cohen, Manion & Morrison, 2011, p.561). These codes were then grouped into categories, which were given names as *technological, traditional* and *individual learning approaches* and subsequently the data were located into these groups consistently. Additionally, the codes that conveyed similar information were combined into one category followed by adding quotes with similar information to these categories, an approach followed from Prinsloo et al. (2011). For example, for the first concept (learning with technology; installed apps) the codes 'access' and 'always available' constituted the category 'Available anytime, anywhere'. In the same manner, several codes were combined in concepts two (learning with technology, *socialising apps*), three (learning with traditional approaches); and

four (learning with other individually preferred approaches), constituting 3 or 4 categories in each concept.

While a similar approach of coding and categorising was also applied to data presentation from the diaries and the researcher's logbook, the codes and categories created were re-arranged several times, in order to pay attention to language and reflect on the emergent meanings and patterns of human experience. As explained by Saldana (2016), re-coding and re-categorising codes and categories may become more refined using the First Cycle and Second Cycle methods, rearranging and reclassifying coded data into different categories or even creating new categories. Likewise, in this study, codes and categories were not only rearranged but also re-labelled and refined into fewer categories, dropping several extra and unnecessary categories. For example, the initial 17 questions in the interview data presentation were reduced to only 7 themes, and linked to the three main categories in the study *(learning with technology, traditional approaches* and *individual learning approaches)*, by combining two or three categories such as learning with installed application and socialising application and other smartphone functions used for learning.

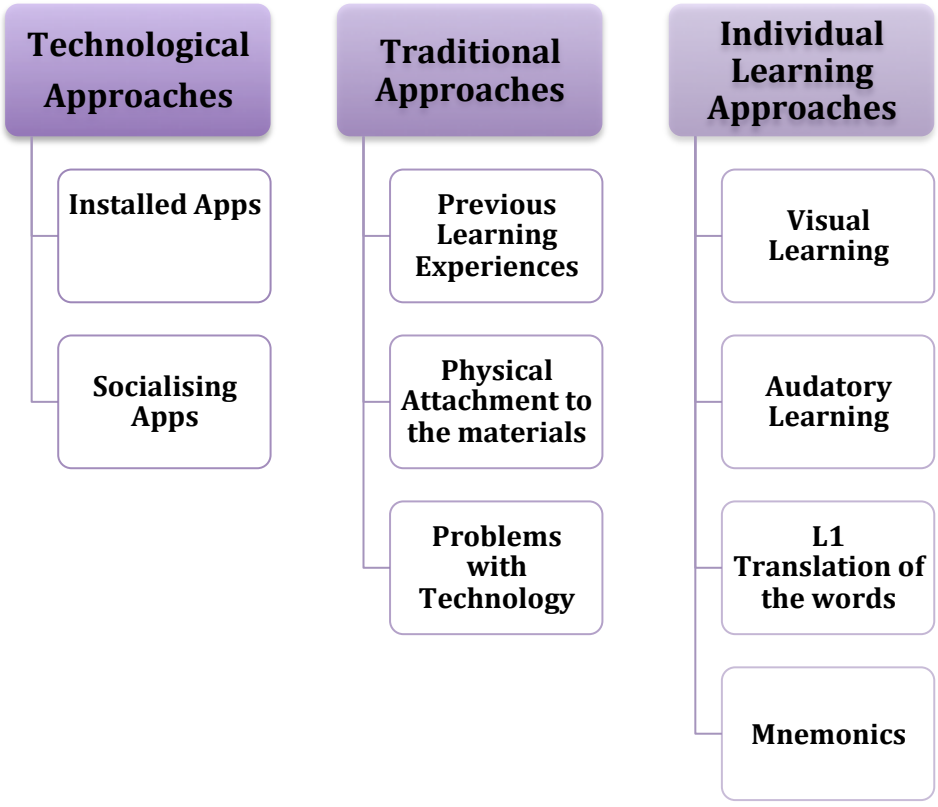


Figure 3.6 Participants' attitudes towards the three main approaches used and presented in the study

The participants did not only have the opportunity to discuss the effectiveness of the applications incorporated in the study, but also discussed other individual learning approaches used. However, when relying on interviews as a data collection method, the issue of "building trust between the researcher and the interviewees becomes very important" (Meyer, 2001). Fortunately enough, the participants in the study were the researcher's students enrolled on an EAP course. As a result, there was minimal concern over building trust between the researcher and the participants, since they were in contact with each other on a daily basis and had built rapport prior to participating in the study. The primary concerns or limitations, however, were based on time constraints. The EAP courses ran on an intensive basis for 10 weeks, 5 days per week from 9am-4pm. At the end of the teaching day, it became extremely difficult to agree to give an interview, which took 10-15 minutes and participants had to wait for their turns. Although this was only expected to happen at the end of the study, it needs to be mentioned that at the end of the pre-sessional course, the majority of the learners had also planned to travel to their home countries for a short holiday, before their major degree courses commenced.

The diaries were kept by the learners and filled in on a regular basis throughout the 10-week period. They were used as part of data collection because they would provide information on the learners' ease and difficulty with learning, as well as other limitations and challenges faced during the study. It was only through the diaries that the researcher would be able to understand the real experiences that students had with smartphones as part of MALL in learning English language vocabulary. Participants were also allowed to keep an electronic record on their smartphones, through screenshots and captured images, or voice-recorders in their smartphones, in order to add notes, instead of using a pen and paper diary writing method. Since the study focuses on the integration of digital approaches and smartphones in particular, the participants were encouraged to share these approaches and ideas for keeping a diary, whether in the form of a smartphone diary, or traditional diary focusing on smartphone use. The notes taken and documented were forwarded to the researcher at the end of the study for analysis.

A Researcher's Logbook was kept and recorded manually during the study, which documented learner activities, learners participating initially and dropping out of the study in the middle, learners not only receiving the messages but opening, reading and seeing them as well. In other words, the log-book identified active participants from passive participants.

This was done informally through observing whether students were using and recalling the learnt words in the tasks in the classroom. For comprehension checking, learners were also asked about the image or example sentences associated with the word recalled in the classroom. The informal observation helped the study, in finding out if the participants were passive learners, receiving the words and reading them once only, or if they were active learners, receiving, opening and revising the words and therefore recalling them successfully during the classroom activities on the following day.

To conclude, questionnaires, diaries, a researcher's log and interviews were successfully administered in light of the data gathering questions and their pertinence to the research questions (as displayed and detailed in Table 3.1). The triangulation of the methods, as well as the findings from the instruments as expected, seek to make the study more reliable and result-oriented (Almekhlafy & Alzubi, 2016).

Research question or sub-questions	**Data gathering questions**	**Notes**
The perception that students have towards the use of smartphones in English Language Learning: RQ1: How do students incorporate smartphone applications into vocabulary acquisition in their daily lives?	**Questionnaires** • Which of the following did you use for learning the English language in your home country? • Which of the following do you currently use for improving your English language? • If you agree that your English language has improved since you have come to study in Britain, which of the following has assisted and helped you in developing your language? • To what extent do you agree that technology is more helpful when it comes to language learning than traditional approaches, such as textbooks/course books, notebooks, and writing lists? • If you agree, please briefly describe how technology has helped you with improving your English language? • Which of the following? in your opinion, is the most helpful and effective for improving your English language (you may choose more than one)? • Which language do you use, when using your smartphone? • Which of the following apps installed in your smartphone, do you most frequently use? • Do you use any application (app) installed in your smartphone for English language learning? • In your opinion, how important is vocabulary development in English language learning? • To what extent are you willing to improve and develop your English language vocabulary? • How many new vocabulary items per day would you be able to learn?	The questionnaire data are related to this study in that they provide the necessary information related to learners' backgrounds, the different learning approaches previously incorporated in English language learning, familiarity with modern learning approaches and participants' suitability for participating in the present research study.

Research question or sub-questions	Data gathering questions	Notes
RQ2: What other strategies might be available and used by the learners for acquiring and developing vocabulary alongside the smartphone-based support and could they acquire vocabulary more effectively by combining smartphone application strategies and their own strategies?	**Diaries** • Regular input by the participants related to their learning stages • Attitudes and perceptions of different learning approaches • Not only record experiences related to the acquisition and participation in the study, but also keep participants engaged in their learning process and input their opinion about it.	The data aligned with the current study by presenting the experiences to identify challenges or barriers to English language learning and how they are being addressed by the smartphone applications, especially for second language learners. Also, participants have the opportunity to input their own learning approaches incorporated during the study, and whether the approaches were effective, which had not been instructed by the researcher.
RQ3: How do learners' perceptions of informal learning using smartphone applications influence more formal aspects of the programme, such as classroom practice?	**Researcher's Logbook** • Again, not only to record daily or regular experiences related to teaching and research study, but also find out if the researcher's notes corroborate with the participants' diary and interview output. • The logbook findings and participants' diary are expected to generate open-ended answers, which could not have been obtained from the interview sessions from the majority of the participants, due to time constraints and lack of motivation for participating.	Researcher's covert observation for the target words learnt outside the classroom informally through the applications and whether the learnt words are used, recycled in the classroom and retained for later uses.

Research question or sub-questions	Data gathering questions	Notes
RQ4: How do the learners perceive smartphone applications designed and created specifically for vocabulary development and installed on smartphones, in comparison to applications (e.g. Viber, WhatsApp and Facebook Messenger) mainly used for socialising but employed for vocabulary development in the present study (conscious versus unconscious learning)?	**Interviews** • What is your opinion of technology use with language learning compared to traditional approaches, such as textbooks/course books, notebooks, and writing lists? Why? • What apps on your smartphone did/do you find the most useful and effective for developing your vocabulary (possible answers) • Which of the following (non-app) approaches would you consider more effective for vocabulary development? Why? • Which of the following apps did you use for receiving the new words? • If you chose one of the above apps (Viber, Whatsapp, Telegram and Facebook Messenger), how satisfied are you with your vocabulary development via your chosen app and how effective do you consider the app to be? • To be more specific, do you think you learned more words from the socialising apps (WhatsApp, Viber, Telegram and Facebook Messenger) or the installed vocabulary development app (IELTS Academic Words List), why? • If you did not have to use any of the above apps, how would you have learnt a set of new words? i.e. how do you normally learn? • While learning the meaning of the new words, how often did you translate the word into your first language? Why do you think it is important to translate the new words into your first language? • How many times per day did you read each new word sent via your chosen socialising app? • Did you encounter any problems during the learning with the installed or socialising app? • Did sending and receiving messages for vocabulary development via your chosen socialising app cost you money? If yes, how much? • Would you recommend learning with a socialising app to friends in future? • What did you most like about learning with socialising app? • What did you least like about learning with socialising app? • What is your overall opinion about the Stage 1 (installed app) vocabulary learning? And why? • On a scale of 1-9 (1=least likes and 9=most liked), which of the following aspects of Stage 2 (messaging on socialising apps) did you like the most? Why? • Would you like to continue developing your English language vocabulary using your chosen socialising app and other similar apps?	Interviews were more aligned to the study because through in-depth engagement and discussion with students, their perceptions, opinions and attitudes could be qualitatively analysed, in the light of seven themes below: 1. *Perceptions of traditional approaches for vocabulary acquisition.* 2. *Perceptions of using the installed applications for vocabulary acquisition.* 3. *Perceptions of using the socializing applications for vocabulary development.* 4. *Perceptions of participants' satisfaction with the two types of applications for vocabulary acquisition.* 5. *Perceptions of technical and non-technical challenges faced by the participants during vocabulary acquisition.* 6. *Perceptions of personal practices for vocabulary acquisition.* 7. *Perception of future opportunities for vocabulary acquisition.*

Table 3.1 Data gathering questions and their pertinence to the research questions

3.6. Selection of participants

In terms of sampling, it was necessary to target 20 EFL adult learners enrolled on a pre-sessional EAP course at a university in Britain. Initially, 45 learners agreed to participate in the study, but not all of them remained until the end of the study. This challenge is further discussed in section 7.2 (Research challenges) of the Conclusion chapter. The participants were aged between 16-35 years and had come from different countries, predominantly China and Libya but also some European countries. The participants were informed about the nature of the work being carried out and that their participation in the study was voluntary. This was particularly important for the pre-sessional course students, as they were going to be busy with the studies pertinent to their degree courses. These participants attended pre-sessional EAP classes, aimed at improving their academic English language in preparation for their major undergraduate and post-graduate courses at university; the courses usually last 10 weeks, from early July to early September. Subsequently, in late September or early October the participants' bachelor or masters degree courses commence. For students with lower English language ability or needing additional assistance with their language, the pre-sessional course usually continues for another 10 weeks until December as an in-sessional course.

With regard to their knowledge of the English language, EAP and pre-sessional students come from different educational backgrounds and aim to study different courses during their major studies, such as accounting, business, computer science, renewable energy, and so on. It is therefore not possible to provide each learner with a list of words pertinent to their field of study, especially when all learners are added to one group and learn the same words. However, this study aimed to assist EAP students in developing their vocabulary knowledge not only necessary for the successful completion of their EAP course, but also provide them with necessary terms which they were going to rely on later in their major studies when producing their assignments in a form of an academic essay or presentation, regardless of their field of study. As far as the academic level of their language is concerned, the participants had already passed the IELTS tests and had a sufficiently developed vocabulary. It was therefore anticipated that the constant use of smartphones for vocabulary learning in the present study would help them learn new words easily. Moreover, the present study also aimed to familiarise students with how their mobile telephones could not only be used for communication and socialising, but could also be used as a learning tool in their pockets.

To avoid biases, it was necessary to use random sampling, taking into consideration both genders. Similarly, creating rapport with the respondents was significant, for explaining the motives behind the study with an explanation of the voluntary nature of the study. In addition, the reason for conducting the study on adult learners was not only due to ease of access to the participants (as they were the researcher's students), but also because of the five essential characteristics of adult learners, which according to Pagliaro (2010) are: (a) someone who can direct his or her own learning; (b) has accumulated life experiences that act as a rich resource for learning; (c) has learning needs closely related to changing social roles; (d) is problem-centred and interested in immediate application of knowledge; and (e) is motivated to learn by internal rather than external factors.

Similarly, these five characteristics could assist the researcher and the project in the following ways: (a) participants had directed their own learning by learning the target words outside the classroom and applying it to their language in the classroom; (b) participants had already accumulated the experience of learning the English language in their home countries and had been exposed to other techniques for learning such as immersion and socialising after having arrived in Britain; (c) the participants' learning needs were based on developing their EAP vocabulary knowledge, which they were going to need in their major courses after completing their pre-sessional courses; (d) they were aware of their weaknesses and the need for a developed vocabulary bank as well as applying the learnt words to their academic assignments; and last but not least, (e) the participants were interested to learn these words not only to pass their assignments, but gain the knowledge through a 'fun' and interesting socialising method, which was assumed to be the main source of motivation and participation for them.

In terms of participants' selection, not only were they informed about their voluntary participation, but it was also made clear that the reluctant and less interested participants were not be coerced into participation by fellow classmates or friends and that they entered the study free from peer pressure. The study therefore respected ethical issues in research, especially those of anonymity, informed consent, privacy and the confidentiality of information (Halse & Honey, 2005). Here, the private nature of the data was maintained by promising to treat each respondent anonymously, storing the collected information in an appropriate way. The researcher subsequently gave a 10-15 minute presentation on the first day of the pre-sessional course, during a diagnostic session. Ideally, the presentation could have been video recorded while the researcher was explaining the nature of the study and

displaying the Microsoft PowerPoint slides as examples and what was going to be involved in the study. But doing so, on the very first encounter with the students or participants, could have put both the presenter/researcher and the audience/participants at unease. During the lunch break, the research consent form and the participants' information sheets were distributed to the learners followed by the pre-tests, which took about 10 minutes to complete.

The participant information sheet contained information about the researcher in terms of her interest in the study and why she wished to invite the participants to take part in a research study about mobile telephone messaging and vocabulary development: how learners can integrate an extended tutorial backchannel into daily activity when learning English as a Foreign Language. Participants were also allowed to take time to read information carefully regarding the nature of the study before they decided whether or not they wished to take part. Likewise, participants were informed about what the study was about as well as the aim of the study, which was to find out how effective smartphone applications can be in vocabulary development. The aim was based on using two types of applications on their smartphones: an installed vocabulary learning application; and socialising applications. The participants were made aware that they had been invited to take part because the researcher was interested in understanding how pre-sessional students can develop their academic vocabulary outside the classroom through the use of smartphone applications. Next, they were provided with 5-10 minute pre-study questionnaires. The participants took pre-tests for the target vocabulary items, in order to compare the number of words known before they took part in the study. At the same time, as the learners were submitting their pre-test papers and pre-study questionnaires, they were also informed about the use of diaries from day one and what to record in them.

Later in the day, after having completed the pre-sessional scheme of work for day one, and during the wrap-up stage of the lesson, participants were assigned to their preferred groups (Viber, WhatsApp, Telegram and Facebook Messenger) and a welcoming message was sent to all of them. The initial message was also a trial message to make sure that all participants were able to receive the messages in the group and able to open, read and respond to them. The participants were also instructed on how to install the vocabulary application that was going to be used during the first stage of the study. Earlier during the break time, the students from the researcher's own class had shared the word among other students from other classes about the study and how their participation could be beneficial for their vocabulary knowledge. As a result, at the end of the teaching day and before heading home, keen students

from other classes started approaching the researcher and asked to know more about the study. Having explained details and repeating the short presentation given earlier in the morning, more and more students were joining the groups from other classes. Finally, it was made clear one more time that the participants were fully aware of their voluntary participation, the nature of the study, the blended approach to learning as well as the benefits associated with the participation.

3.7. The study design

In this study, there were target EAP words, delivered to students in small batches on a daily basis as multimedia messages. The students received 5-6 target words with their definitions, examples, derivatives or word-families, an image to visually define the target word and an audio file which provided the pronunciation of the word. The idea of incorporating images and word family elements of the messages, was based on the following benefits, mentioned in Nation (2001):

- The incorporation of images as the definitions or meaning of the words, alongside the written definition, will seek to enhance the learning and assist the learners in memorising and remembering the meaning of the word for much longer, by picturing the image associated with the word, since "real objects, pictures, etc. are often seen as the most valid way of communicating the meaning of a word" (p.85).
- "Word-parts" give learners the opportunity to make full use of the word families they know as well as contributing to remembering new "complex words" (p.100).

In terms of research design, the initial plan for conducting the present study was to have two groups of participants, in the two phases (prongs) of the research. The first intervention would have been the researcher's own class receiving direct instruction for developing their vocabulary knowledge through messages on their smartphones for a period of ten weeks, containing 400 EAP words. The second group would have been another class provided with the same list of 400 words, allowed to apply their individual learning approaches (memorisation, previous learning techniques, technology based or simply choosing their own unique approaches to learn) and not receive MMS instructions as the first group. The two groups would have been compared at the end of the study in terms of their achievement and

ability to develop their vocabulary knowledge, through the use of two different approaches. The central premise of using the two-phase case study was that for each case, the phenomenon (language or vocabulary learning) was being explored in its context (classroom context) and observations could have been made on the progress of the participants.

The second group (individual learning approaches) would not only have been deprived of the additional support outside the classroom, provided by the researcher/instructor, but the idea of having two groups would have potentially assisted one group of learners with learning and enhancing their vocabularies more than the other group while, as mentioned earlier, both groups were enrolled on the same course and aimed to achieve similar goals. In retrospect, it was felt appropriate to invite all pre-sessional learners on the course to participate in the study voluntarily, to receive a similar treatment and to potentially benefit from the study. All volunteers were added to 'one' group of participants, who received different treatments at different times during the experiment. In other words, instead of choosing two groups of participants and treating them differently, one group of participants received two different types of treatments at two different stages. The results will therefore report findings from the different types of treatments and not different groups of participants. To summarise, the cases were examined both holistically (Yin, 1989, cited in Meyer, 2001) looking at their overall purpose and use, as well as analytically, where the positive and negative aspects of their uses and their efficacy were investigated through the results obtained from post-tests and other research tools.

3.8. Data collection process

The present study used different technological techniques and strategies for teaching new vocabulary items. The research questions were used to explore the possibility of enriching and developing vocabulary items in a short time, while focusing on what techniques could work and be more helpful and motivating for the learners. The strategies that were implemented in the present study were electronic- or technology-based strategies that teachers could use to develop students' vocabulary learning and interest in the words. These strategies relied on digital tools and resources suggesting the evoking of learning potential that is possible when technology and media are part of the instructional mix. Nonetheless, none of the above would have been possible without the intervention of the teacher, who also happens

to be the researcher. Therefore, the teacher was intervening in the change of practice through the incorporation of smartphones and smartphone applications.

The primary digital tools used in the present study were smartphones. The secondary digital sources used in the study were smartphone applications. These applications were used to aid the participants' vocabulary representations through multiple modes. As described in detail in section 1.8 (A and B) of the Introduction chapter, the **first type** of application incorporated was the 'IELTS Academic Word List' and participants were instructed to go through the first 10 lessons in package 1 (200 words) only. Prior to embarking on the learning, participants were provided with a pre-test for the 200 target words. The case of learning words from an installed application ran for 5 weeks and the participants were required to learn the 200 words in the package installed, using their own personal practices. In other words, learners were not prescribed or instructed to use a particular learning practice but they were allowed to use the learning approach which they had found effective when used in the past. At the end of the 5 weeks of learning, the participants took a post-test, in order to find out the number of words acquired during the 5 weeks' learning and compared with the number of words known "before" the study.

The **second type** of applications were socialising applications such as WhatsApp, Viber, Telegram and Facebook Messenger. These socialising applications were already installed on many of the participants' smartphones and equipped with voice, audio and camera options. A brief description of the most common commands used for performing tasks that these socialising applications had in common are previously displayed in Chapter 1, Table 1.1 (section 1.8). Despite the above similarities, the applications also varied from one another, to some extent. The main reason for choosing these applications was the observation that the majority of the learners used them frequently. So, the remaining 200 words were sent to the learners via these applications, on a daily basis, as multimedia messages. Learners were sent 5-6 new words with images, definitions, examples, derivatives or word families as well as their pronunciation each day, alongside essential phrases used and taught in their academic course-book. Similarly, this phase also ran for another 5 weeks and there was a pre-test and a post-test for these 200 target words. The participants took a post-test in order to find out the number of words acquired during the 5 weeks' learning and compared with the number of words known "before" the study. The aim of the assessments at the end of the learning period in both cases was not only to check effectiveness of the applications, but students felt more

motivated to learn, since there was an aim for learning when there was an assessment at the end of the learning task.

Almost all of the participants owned smartphones and most of them also had access to the internet. Most of them were already familiar with basic learning tools such as dictionaries and translators and had installed them on their smartphones. Therefore, the majority of these 'tech-savvy' students/participants felt comfortable using the proposed tools. The participants knew each other and had been introduced to each other in the classroom. Therefore, adding themselves to the learning group created on each application did not seem daunting to them but was regarded as an interesting and useful experience. Learning through collaboration while using the socialising tools has been shown to be an effective learning model (McAliney, 2013). McAliney also states that with the use of ubiquitous devices such as mobile telephones, shared resources are built through social networking and collaborative tools which is necessary for supporting enhanced educational experiences. Social networking activities enable learners to develop an increased comfort with using technology for sharing information as well as creating shared spaces in Facebook, MySpace, Twitter, Weblogs, LinkedIn and instant messaging.

To elaborate further on the second type of applications used for messaging (the socialising apps), the words were not taught in isolation, but the entire word family/derivatives were provided to the learners. The words were sent in alphabetical order, also intended to assist learners to search for the words easily in future. Some units contained fewer EAP words and some contained more than 10 EAP words, which were sent to the learners over two sessions. The messages were not sent as a plain text, but as an image containing the text. Each message containing the images for the target words was saved in the 'media folder' or 'shared content' folder of these applications, which made it possible for the learners to access them in the future for recalling, instead of having to scroll up and down through messages. The accessible 'media folder' or 'shared media' option was available in all three applications.

Efforts were made at including more than one definition where applicable. For example, the word 'approach' was provided with three definitions: 'coming near'; 'dealing with'; and 'communication'. The word forms 'noun, verb, adjectives and adverbs' were also provided, as well as the different pronunciation used for the nouns and the verbs such as the word 'attribute'. The challenging part was including and accommodating images for all word families in one slide, and as a result, the size of the image and the entire slide had to be minimised. Similarly, where one image was not enough to illustrate the definition as a whole,

two images were selected. For example, for the word 'efficient', two images were provided: one for saving time; and another for saving money. It was anticipated that, based on previous research recommendations, putting in such effort outside the classroom in order to develop the learners' vocabulary would result in an expected level of proficiency inside the classroom.

With regard to achievement and success, previous studies have reported a certain level of proficiency when messaging learners on their mobile telephones (Gasparini & Culen, 2012). In the present study, it was intended that the learners would not achieve a "certain" but a considerable level of proficiency in EFL learning through the up-to-date smartphone applications used. Moreover, a primary difference would be due to the existence of human interaction in learning and teaching as opposed to the artificial robotic environment created by CALL or other online platforms, where the main focus is usually on teachers feeding information to students and paying little attention to learning goals (Menezes & Verschoor, 2014). Another factor to enhance learning was the use of images and visual representations, since initial stimulus for learners could be pictures (McCarthy, 1990). But as pictures have their limitations too, not all words are easily explained by a visual stimulus, causing confusion to the learner. For example, the majority of the abstract nouns such as the word 'attribute' is a noun one may not be able to find an image for easily. In the present study, the researcher, also the language instructor, prepared all of the target words and the images that were pertinent to the words, based on the types (advanced academic English words), needs (enhanced vocabulary use in academic assignments) and language level of the learners (intermediate to upper-intermediate).

When preparing the slides and sending the target words to the learners for acquisition on the socialising apps, every effort was made to make the task simple, easy, interesting and make the overall learning experience an extraordinary one for the learners/participants. Some of the frequent and common issues faced during the stages involved in the study were:

- The primary steps for sending the target words to the learners involved the selection of words from the students' EAP course-books. Google images for the target words were found, copied and pasted into MS PowerPoint slides. Then the definitions or meanings of the words were added to the same slide as well as examples, word-families/derivatives and, in some cases, antonyms and synonyms were added too. The slide was then accessed as full-screen and a screenshot of the slide on the laptop was taken. The screenshot was subsequently sent to the four socialising apps (already opened on the researcher's desktop as web applications).

- The knowledge of the word and its correct pronunciation are equally important. It was therefore imperative to provide the students with the audio file and the pronunciation of the target words. The standard pronunciation of the words was recorded using the microphone icon in all three applications and sent to the participants in each group of each application immediately after sending the photographic image of each new word.
- In some cases, where the image was still confusing, the written illustration was also provided to describe what was happening in the photograph, for example, 'error-prone', was shown as a robot collecting medicine in the pharmacy.
- Sometimes, when images could not illustrate the definition clearly, famous quotes were chosen from Google quotes, such as 'dwell-on….' and these were written over the image in the same slide.
- In order to ease the process of selecting images and obtaining a higher success rate, concrete nouns and names of easily accessible images could have been chosen. However, and for reliability's sake, the words in the present study were selected from two sources, both the students' academic English course-book, and the supplementary material book used in the pre-sessional course as an authentic and strongly relevant source of EAP vocabulary development. The words included nouns (both concrete and abstract), verbs, adjectives, adverbs and phrasal verbs.
- Prior to preparing the MS PowerPoint slides, the 400 target words (both phases) had been prepared for testing students' knowledge of the words before taking part in the study. The words had been prepared as a pre-test in forms of multiple choice (A, B, C) and (Yes, No, Not sure) answers. The same tests were administered at the end of the study to find out the difference in the knowledge of the words before and after the study. The pre-test, post-test, pre-study questionnaires, interview sheet and diary notes of each individual student were stapled together for easy analysis. Daily participation, proof of receipt of the words through messages, each day's activity by the students, such as messages seen or read, participants joining or exiting the groups and no longer participating was also recorded manually in a log book. Attention was paid to those students who received the messages, or where the messages were delivered to them, but they avoided opening them, seeing or reading the message. Records of the log book, and results for pre- and post-tests would be compared in the light of pre-questionnaires and post-interviews for every individual participant.
- The words provided to the learners were not sent as individual units. They were sent alongside other words or derivatives from within the same family. For example, the

word ‘anonymous’ was sent together with ‘anonymously and anonymity’. This was particularly important for the reason that, in academic study, knowledge of not only academic words but derivatives is needed when producing academic assignments. The knowledge of different word families such as nouns, verbs, adjectives and adverbs of the same word as well as the use of active and passive verbs are particularly important when paraphrasing an academic text from another source. For example, the sentence ‘A call was received from an anonymous identity’ could be paraphrased as ‘The call was made anonymously’.

- In terms of the selection of contents, it was necessary to consider which words were more useful and important and would be taught first and foremost. Therefore, words related to the production of academic assignments, such as essays and presentations, were selected mainly, as learners were going to rely on them strongly, in subsequent stages of their course.
- In a mono-lingual class, it would have been possible and preferred to ask learners for the L1 definition or equivalent of the word in order to check comprehension, but with a class mixed of two or more languages, that was not possible. However, the definitions were followed up and asked in the classroom the following day, at the end of the teaching session, and during a wrap-up stage.

To sum up, the primary focus in the present study was on the incorporation of digital tools and mobile technology used for vocabulary development. For the entire 10 weeks of learning, these participating learners were encouraged to use their smartphones and other digital tools inside and outside the classroom for independent language practice. The only occasion where paper was used, and not technology, was during the administration of the pre- and post-tests from the participants. Tests on a digital tool, particularly outside the classroom, can be unreliable since there is lack of monitoring from the language instructor (Wardak, 2015; Palloff & Pratt, 2009; Kamont, 2009). Therefore, the above tests were administered on paper in the presence of the researcher.

3.9. Ethical considerations

Prior to conducting the study, an application was submitted to the Ethics Committee at the Faculty of Arts and Social Sciences, Lancaster University. The application was approved and permission for conducting the study was granted on the following basis:

- To ensure that participants are not forced or coerced into the study and that their participation is voluntary
- All necessary steps to obtain the voluntary and informed consent of the prospective participants will be taken by administering and collecting the completed Participants Information Sheets and Consent Forms
- To ensure that the data maintains confidentiality and anonymity
- To provide a plan for addressing the discomfort that may arise during the conduct of the research and discomfort that may develop following the conduct of the research, potentially as a consequence of participation in the research (joining groups in the applications and sharing contact details with other group members)
- To inform the participants that all data collection tools (interviews, questionnaires, diaries, pre- and post-tests) will be kept anonymous and they will be given numbers for analysis later on. The participants' actual names will not be used or identified in the thesis or future publications
- All data will be stored in an encrypted folder on the Lancaster "Box" service
- That folder will only be accessible to the researcher and her PhD supervisor

If students felt uncomfortable sharing details required for the study about their daily lives, this risk was addressed by: (a) emphasising that the participant was guaranteed anonymity in any research reporting; (b) emphasising that participants did not need to disclose any information they did not wish to when providing answers to the questions they were asked; and c) emphasising that participants could choose to withdraw from the project. The researcher was part of the course delivery team for the EAP pre-sessional programmes, and students/participants were aware that she would deliver some training sessions to them as part of their official institutional timetable. Any issue of confusion arising was addressed by emphasising the purely voluntary nature of students' participation, and that participation would not have any impact on more official institutional participation requirements such as

attendance in classes, assessment requirements, etc. Another ethical concern could have been on fairness, since involvement might have only benefitted the students who signed up and participated in the study. This issue was addressed by providing equal chance and opportunity for everyone to participate in the study.

Regarding participants' reservations about sharing contact details with other group members, the only occasion which might have put the participants at unease was when they were added to the groups created through social media applications on smartphones. For example, if a group created on the Viber or WhatsApp application included 20 participants, they could see each other's contact numbers and how actively each member had been participating in the group activity, by "seeing" and "reading" the messages. Since the participants knew each other before the study commenced and had befriended each other on the same course, the study anticipated that sharing contact details would not be a substantial issue. Also, during previous years, it had been noted that most of the time, the classmates used to create their own socialising group as soon as they were added into a particular class, and started updating each other about the course. Furthermore, should any group member become a nuisance to the rest of the group members, they could be easily removed from the group and blocked from contacting in the future. Both the researcher and other participants were able to block and bar the unwanted group member's access to the group, through the social media application as well as on the mobile handset. When asked about what they had to do if they took part in the study, the participants were provided with detailed guidelines by the researcher (see Appendix 1).

3.10. Conclusion

The study was based on academic vocabulary development of pre-sessional course learners studying EAP at a university in Britain, in preparation for their major degree courses. The primary research tool was a smartphone and the secondary tools incorporated in the research were smartphone applications. Two types of smartphone applications were investigated (installed apps, specifically designed for vocabulary development, and socialising apps mainly used for socialising) in terms of their effectiveness in vocabulary development outside the classroom. In total, there were 400 academic English language vocabulary items provided to the participants over a ten-week period. There was a pre-test at the beginning of the study

and a post-test at the end of the study, which were informative in terms of identifying the knowledge of the words known before and after the study.

With regard to research design, a case-study approach was selected. Data collection tools were pre- and post-tests of the target words, pre-study questionnaire, post-study interviews, as well as diaries, which were filled in by the learners throughout the study. For the analysis of the study, both qualitative and quantitative approaches were implemented. Regarding the selection of participants, 45 participants took part in the study initially. However, not all of them remained committed until the end of the study, which resulted in 25 participants dropping out before the completion of the study, leaving 20 participants to remain until the end. The participants were EAP learners enrolled on a pre-sessional course at a university in Britain and had a genuine aim for developing their academic vocabulary knowledge.

As far as ethical considerations were concerned, the study made sure that the participants were free from coercion, and were participating voluntarily. Their personal information and identities were to remain anonymous and most importantly, their safety was ensured even after their participation in the study. Since the present study involved group work, and during the second stage of the study all participants were added to a group in socialising applications, it was made clear that they did not experience any discomfort of any form and that they were free to exit the group at any time. They were informed about the possibility of blocking other group members in the socialising applications, from contacting the participant directly, where necessary.

To conclude, the incorporation of the two different types of applications in the present study are intended to shed light on the effectiveness as well as students' preference for a particular type of application used for vocabulary development. A comparative discussion will be offered in the subsequent chapters, based on the results obtained from the research tools and it will be explored whether robotic-style learning applications available on smartphone markets installed by thousands of users are effective enough when compared to alternative applications such as the socialising applications, that are considerably different. Mainly, this difference in usage arises from the presence of human interaction, which is involved in the teaching and learning process.

Chapter four: Data Presentation

4.1. Introduction

This chapter presents the data collected from participants in the form of questionnaires, interviews, diaries, and the researcher's own logbook, which was maintained throughout the study, as well as pre-tests and post-tests. The details are offered in a relatively unmediated form as suggested by Trowler (2014), while the key issues are analysed in the subsequent chapter. In this chapter, the qualitative evidence is used as primary evidence and supported with some quantitative evidence (participants' feedback is supported by their performance in tests). The main research outcomes are identified through interviews and categorised into seven groups. These seven groups are based on seven perceptions developed by the researcher in light of participants' responses to interview questions.

As can be seen in Figure 4.1, there are four circles that describe the relationship of the forms of data. Circle A, in the middle of the figure is the primary source of data (interviews). Circle B has categorised the seventeen interview questions into seven categories, after arranging similar questions together. Each of these seven categories report participants' perceptions of a particular learning approach. Circle C is the supporting circle, where data collected from other research tools such as diaries and the researcher's logbook support the data in interviews. Finally, circle D is the evidence circle, where results obtained from post-tests are compared to previous knowledge of words in pre-tests and presented as evidence in the light of responses received from the main research tools. Feedback received from the interviews and supported by diary and logbook entries indicate the importance of the teacher's role in language learning that promote the social aspect of language learning as well as enabling the adoption of inclusive approaches in language learning, by the learners, and as a result, participants have performed better in the post-tests based on these pedagogical aspects (reported in pre- and post-tests), displayed in Table 4.1.

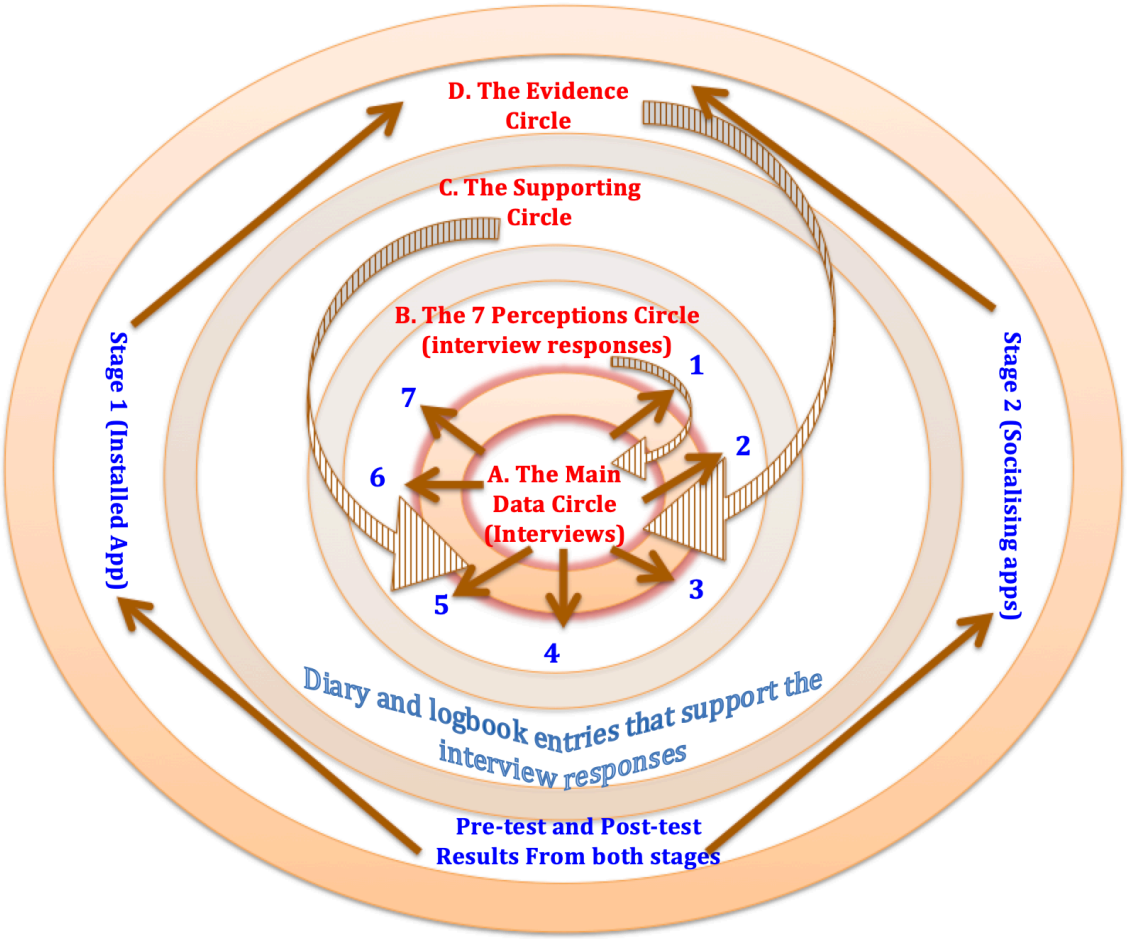


Figure 4.1 Mixed-method approach of data gathering (Thomas, 2013) - qualitative data supported by quantitative data

The questionnaires sought to obtain information related to participants' backgrounds, the different learning approaches previously incorporated in English language learning, familiarity with modern learning approaches, and participants' suitability for participating in the present study. The questionnaires, therefore, support the primary research instruments with claims regarding the social aspects of language learning by providing the general background and demographics of the participants in the present study as well as their familiarity with the socialising applications incorporated in the present study. Questions in the questionnaire were primarily focused on previous and present learning experiences. The content and questions in the post-study interviews were concerned with participants' learning outcomes, the role of the teacher, their perceptions of the different learning approaches inclusive to them and different applications incorporated in the study. The diaries and the logbooks, on the other hand, reported regular learning and teaching experiences by both the

researcher and the participants as well as reporting feedback supporting the three pedagogical aspects mentioned above. Furthermore, the interviews aimed to find out: the reasons for participants' performance during the study, in light of the knowledge of words known in the pre-tests and the post-tests; the number of words learnt with the installed application that was utilised during the first 5 weeks of the study (Stage 1); and the number of words learnt with the socialising applications incorporated in the next 5 weeks of the study (Stage 2). The knowledge of words known prior to conducting the study was compared with the knowledge of words acquired at the end of the study, in both stages. The overview of the progress made during both stages (quantitative evidence) can be seen in Table 4.1, which also supports the comments and feedback received from participants at the end of the study (qualitative evidence). To elaborate further, participants were asked about their opinion of the two types of applications and the different features of the applications, which resulted in perceiving one application more positively over the other application.

Table 4.1 shows an individual learning record of all twenty participants. Their knowledge of words before the study is compared to the words acquired after the study with both types of applications. The green colour is an indication of gaining above 60% that could be defined here as 'successful' learning and labelled as 'outstanding performance'. The yellow colour indicates gaining 40 – 60% and is defined as 'above average performance'. The grey colour shows 20 – 40% and is labelled as 'average performance'. Gaining below 20% is labelled as 'below average performance' and labelled with amber colour, and finally the red colour indicates 'no improvement' or where the participants did not attempt learning. These participants provided valuable feedback during the interview stage and when recording personal experiences in their diaries regarding their progress and reasons for language development. Key remarks and comments made by the participants (recorded during interviews, diary and logbook entries) are also reported in Table 4.1 (see the last column on the right).

Individual record of learning and progress made by participants

(pre-and post-test results of Stage 1 and Stage 2)

Quantitative evidence (Pre-tests and Post-tests), supporting participants' feedback received from qualitative data (Interviews, diary and logbook notes)					Qualitative data (Interviews, diary and logbook notes)
Participant No #	*Knowledge of target words prior to the study - --/ 200 (Installed App)*	*Knowledge of target words after the study --/ 200 (Installed App)*	*Knowledge of target words prior to the study - --/ 200 (Socialising Apps)*	*Knowledge of target words after the study --/ 200 (Socialising Apps)*	*Remarks / Comments made by the participants / Reasons for the obtained scores (based on Interview, diary and logbook quotes):* *Italicised: Direct quotes from participants* *Non-italicised: Researcher notes* ** (Installed app)* *** (Socialising apps)*
1	105	96 *	75	125 ** (25% increase)	* *"Why use dictionary if I know English to English meaning"* Did not attempt to learn from Installed app. *"The app in my phone kept freezing"* ***(Interview)*** ** First time to learn with socializing apps and felt satisfied, *"I like spending time on my phone"* ***(Interview)***
2	159	173 * (7% increase)	101	143 ** (21% increase)	* Likes L1 translation, but did not bother learning from installed app. ***(Interview)*** ** Wished all English language dictionaries came with images. ***(Logbook)***
3	64	70 * (3% increase)*	80	62 **	* *"Learning is boring"* (Diary) ** *"I'm going to mute notification on my phone"* (Diary)
4	107	113 * (3% increase)	30	102 ** (36% increase)	* *"The installed app is to dull, plain and boring to learn from".* ***(Logbook)*** ** Very much enjoyed learning with socialising apps as well as using sticky notes. ***(Interview)***
5	0*	81	40	139 ** (49.5% increase)	* Absent on test day and refused to reset ** Perceived the socializing apps to be very effective alongside L1 translation. Also believes in immersion *"Communication with native speaker"* ***(Interview)***
6	124	0 *	40	174** (67% increase)	* Learning not attempted, not happy about the app quality (Diary) ** *"If I become a teacher one day, I will also teach in WhatsApp or Telegram"* (Diary)

Individual record of learning and progress made by participants (pre-and post-test results of Stage 1 and Stage 2)					
Quantitative evidence (Pre-tests and Post-tests), supporting participants' feedback received from qualitative data (Interviews, diary and logbook notes)					**Qualitative data (Interviews, diary and logbook notes)**
Participant No #	*Knowledge of target words prior to the study --/ 200 (Installed App)*	*Knowledge of target words after the study --/ 200 (Installed App)*	*Knowledge of target words prior to the study --/ 200 (Socialising Apps)*	*Knowledge of target words after the study --/ 200 (Socialising Apps)*	*Remarks / Comments made by the participants / Reasons for the obtained scores (based on Interview, diary and logbook quotes):* *Italicised: Direct quotes from participants* *Non-italicised: Researcher notes* ** (Installed app)* *** (Socialising apps)*
7	133	177 * (22% increase)	59	125 ** (33% increase)	** "I match the words to my friends"* (Diary) *** "I love the photos and the images, it makes learning fast"* (Diary) *"I liked the pictures and pronunciation"* ***(Interview)***
8	65	82 * (8.5% increase)	116	197 ** (40.5% increase)	** "Phone keeps jamming and freezing"* ***(Logbook)*** *** "I enjoy learning in a group with my friends"*, *"There was a sense of competition, I like learning in group than learning alone"* ***(Interview)***
9	110	132 * (11%)	64	194** (65% increase)	** "I voice record the new words in my phone and listen to it"* (Diary) *** "I like the pictures and forward the messages to my friends"* (Diary) *"I loved the pictures and learning in group"* ***(Interview)***
10	117	130 * (6.5% increase)	50	192** (71% increase)	* Hasn't opened the app after installing it, as he knew most of the words already. He had already mastered over a thousand entries and was attending the pre-sessional course for improving his academic skills. ***(Logbook)*** ** Combined modern, traditional and individual learning approaches. *"I learn better with pictures and I learned in a new and interesting way with apps"* ***(Interview)***
11	74	80 * (3% increase)	69	110 ** (20.5% increase)	* Did not bother learning from installed app. ***(Interview)*** ** Would like to learn more words in short time. ***(Logbook)*** *"Socialising apps are easy to use and understand, they are popular"* ***(Interview)***

Individual record of learning and progress made by participants (pre-and post-test results of Stage 1 and Stage 2)					
Quantitative evidence (Pre-tests and Post-tests), supporting participants' feedback received from qualitative data (Interviews, diary and logbook notes)					**Qualitative data (Interviews, diary and logbook notes)**
Participant No #	*Knowledge of target words prior to the study --/ 200 (Installed App)*	*Knowledge of target words after the study --/ 200 (Installed App)*	*Knowledge of target words prior to the study --/ 200 (Socialising Apps)*	*Knowledge of target words after the study --/ 200 (Socialising Apps)*	*Remarks / Comments made by the participants / Reasons for the obtained scores (based on Interview, diary and logbook quotes):* *Italicised: Direct quotes from participants* *Non-italicised: Researcher notes* ** (Installed app)* *** (Socialising apps)*
12	111	116 * (2.5% increase)	68	158 ** (45% increase)	* Definitions are difficult to understand, plus no example sentences ***(Logbook)*** ** Example sentences help to learn more. ***(Logbook)*** *"I can share my learning with others"* ***(Interview)***
13	100	126 * (13% increase)	46	170** (62% increase)	** "I don't need to learn all words, as they won't help me in the future"* (Diary) *** "I record my voice and learn better with the pictures"* (Diary) Always online and active learner ***(Logbook)*** *"Phones are available anytime, anywhere", "Who doesn't learn with technology anyway", "I save words with photos in media and access later", "Able to learn a fixed number of words, not a whole list", "Appreciate the teacher's hard job and teaching with love"* ***(Interview)***
14	110	111 * (0.5% increase)	60	105 ** (22.5% increase)	* Negative facial expression witnessed about the app *"They are useful but they take memory of my phone"* ***(Logbook)*** Learns with sticky notes: *"I am able to read and revise with sticky notes without planning, even when cooking"* ***(Interview)*** ** Recalling learnt words in the classroom and taking pride in his verbosity, ***(Logbook)***

Individual record of learning and progress made by participants (pre-and post-test results of Stage 1 and Stage 2)					
Quantitative evidence (Pre-tests and Post-tests), supporting participants' feedback received from qualitative data (Interviews, diary and logbook notes)					**Qualitative data (Interviews, diary and logbook notes)**
Participant No #	*Knowledge of target words prior to the study --/ 200 (Installed App)*	*Knowledge of target words after the study --/ 200 (Installed App)*	*Knowledge of target words prior to the study --/ 200 (Socialising Apps)*	*Knowledge of target words after the study --/ 200 (Socialising Apps)*	*Remarks / Comments made by the participants / Reasons for the obtained scores (based on Interview, diary and logbook quotes):* *Italicised: Direct quotes from participants* *Non-italicised: Researcher notes* ** (Installed app)* *** (Socialising apps)*
15	114	117 * (1.5% increase)	66	102 ** (18% increase)	* Not brought up with learning with phones or technology. *"Technology is complicated and expensive"* ***(Interview)*** ** Forwarded and taught the new words to friends although didn't like the notification tone *"The messages and messaging tone kept distracting and disturbing me", "Real learning with real teacher"* This participant learns better with videos. *"Improves listening and reading and pronunciation", "You can pause video to copy the new words"* ***(Interview)***
16	64	0*	70	76 ** (3% increase)	* Did not show interest in taking the post-tests and admitted that no learning was attempted. ***(Interview)*** ** Wants to learn to please the teacher ***(Logbook)*** Enjoys learning with sticky notes and relies bon L1 translation: *"I like to learn new words on the wall, old words in bin", "Lack of technological resources in home country", "I need to know the meaning in my first language, sometimes they are not accurate"* ***(Interview)***
17	102	104 * (1% increase)	57	94 ** (18% increase)	* Not accustomed with learning with installed apps. *"Installed app was boring, didn't even open the app, the meanings in installed app were more difficult than the actual word"* ***(Interview)*** ** *"Enjoyed learning with socializing apps, but I don't try much learning", "I like learning with videos and images"* ***(Interview)***

Individual record of learning and progress made by participants (pre-and post-test results of Stage 1 and Stage 2)					
Quantitative evidence (Pre-tests and Post-tests), supporting participants' feedback received from qualitative data (Interviews, diary and logbook notes)					**Qualitative data (Interviews, diary and logbook notes)**
Participant No #	*Knowledge of target words prior to the study --/ 200 (Installed App)*	*Knowledge of target words after the study --/ 200 (Installed App)*	*Knowledge of target words prior to the study --/ 200 (Socialising Apps)*	*Knowledge of target words after the study --/ 200 (Socialising Apps)*	*Remarks / Comments made by the participants / Reasons for the obtained scores (based on Interview, diary and logbook quotes):* *Italicised: Direct quotes from participants* *Non-italicised: Researcher notes* ** (Installed app)* *** (Socialising apps)*
18	98	123 * (12.5% increase)	53	170 ** (58.5% increase)	* Used voice recording for practice and revision. Enjoys watching videos *"Watching videos solves understanding different accents problems"* ***(Interview)*** ** Combined traditional and modern learning approaches and relies on L1 translation. *"I like to send emojies and photos", "Fun and interesting", "I can not understand English to English translation"* ***(Interview)***
19	101	0*	91	97 ** (7% increase)	Supports traditional learning approaches: ** "Learning with technology is not popular in my country", "Writing the new words down 10 times followed by memorization and translation into first language", "Dictionaries are expensive to install"* ***(Interview)*** *** "Phones are for talking and chatting, not learning", "I am traditional learner and don't use phone much"* ***(Interview)***
20	172	0*	83	124 ** (20.5% increase)	** "Words in the packages are not IELTS level, but randomly selected", "Problem with phone memory, uninstalling and reinstalling the apps"* ***(Logbook)*** ** Supports traditional learning approaches: *"I like sticky notes, learning with friends and comparing meaning in my first language", "Real feeling of learning by touching your resources like books and sticky notes", "Same note and screen without moving, but phone screen moves and changes", "Lost my phone and lost all messages and apps"* ***(Interview)***

Table 4.1 Qualitative evidence supported by quantitative evidence

With regard to individual results, as can be seen in Table 4.1, the majority of the participants learned more of the target vocabulary items when received on their socialising application, as shown in columns 2, 3, 4, and 5 of Table 4.1, where the number of words in pre-tests are compared to the number of words in post-tests and colour-coded to show if learning has taken place. The results in Table 4.1 are also summarised in Figure 4.14 (section 4.6 of the present chapter), showing applications with satisfactory results. The installed application use, on the other hand, not only lacked outcomes indicated with green and yellow colours, but also included five outcomes that indicated very limited improvement or where learning was not attempted (the red colour). However, only one participant failed to achieve the expected learning goals in the socialising applications (participant number 3).

This chapter will now report the findings from different research tools used in the study, while the subsequent two chapters will map the outcomes using the conceptual framework to identify the dynamics and tensions in actual practices as they were exacted, and discuss if the comprehensive input in the day-to-day research practice assisted the learners in their comprehensive output in their learning practice. Figure 4.2 illustrates the two practices (research and learning) through a timeline, and elaborates on each stage of the timeline.

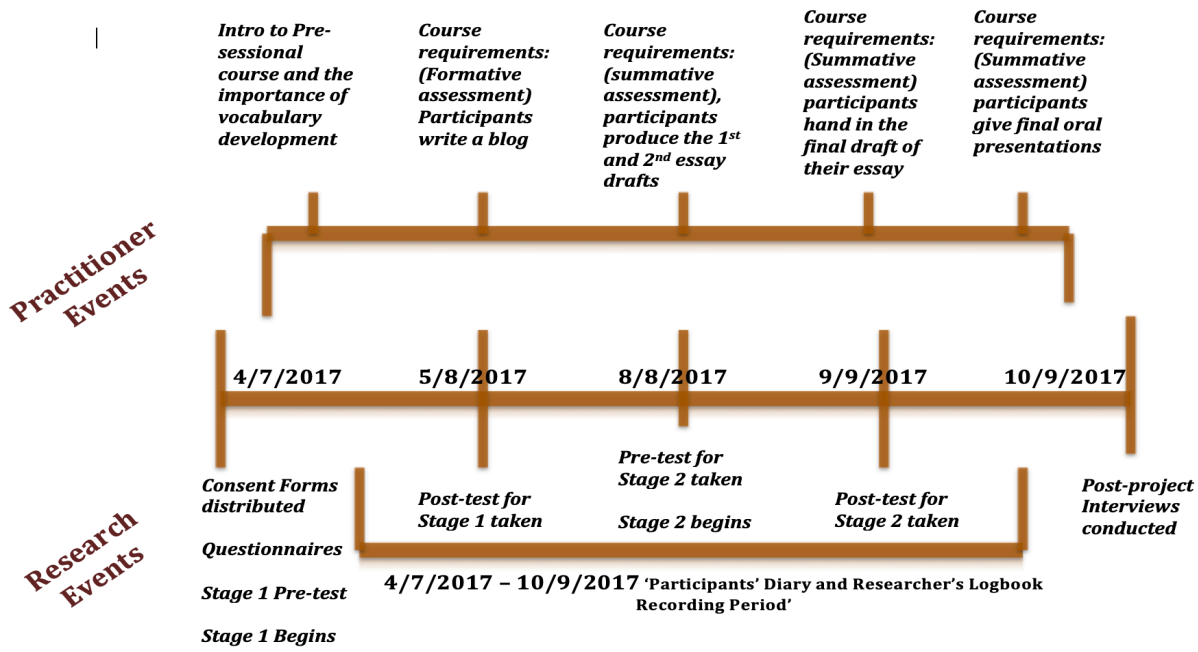


Figure 4.2 Timeline for data collection

As can be seen in Figure 4.2, after the distribution of the consent forms and informing the participants of their voluntary participation in the study, the study began with questionnaires followed by pre-tests taken for Stage 1. At the same time, instructions were given about keeping a diary for the entire 10 weeks of the study, and about installation of the vocabulary learning application. At the end of the Stage 1 learning, a post-test was taken, to find out the extent to which the participants had been able to develop their vocabulary knowledge. Then Stage 2 began, which was preceded by a pre-test, as in Stage 1, and a post-test at the end of the learning period. The final step was the post-project interviews that were conducted at the end of the study. Meanwhile, practitioner events took place during the study, where the pre-sessional instructional planner was used during the entire research period, in terms of the daily teaching and learning, formative assessments and summative assessments. Participating learners were expected to exhibit their vocabulary knowledge gained during the research events, in their final assessments. As can be seen in Figure 4.3, the study started with distribution of consent forms and pre-project questionnaires.

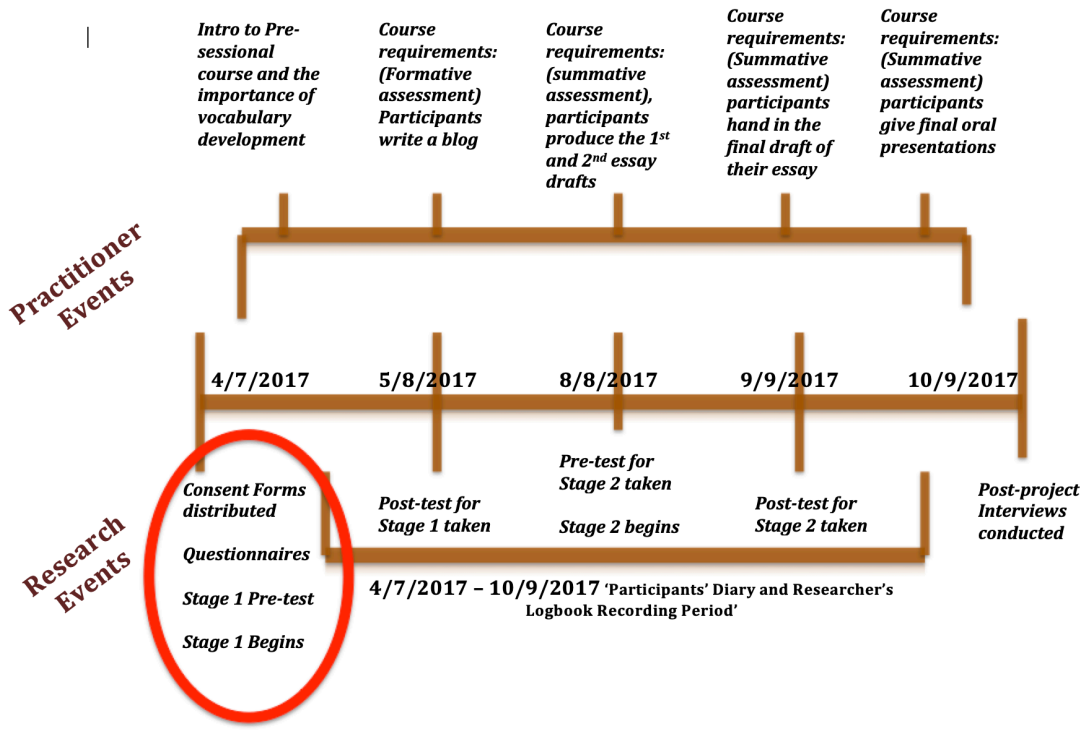


Figure 4.3 Timeline activity on 4/7/2017

Before presenting the data obtained from the research tools, I will outline background information related to the participants (in section 4.2). Subsequently, the responses obtained from the interview questions, notes in participants' diaries and the researcher's logbook are

analysed in the light of the test results obtained from the pre-tests and post-tests. As far as language enrichment during the pre-sessional course and at such an intensive pace (10 weeks) is concerned, it was considered appropriate to conduct the study at this time, while the participants were actively enrolled on the pre-sessional summer school and learning for their major degree courses. In other words, if the study was to be conducted at the end of the summer school when participants were beginning their degree courses, very few or no participants would have shown willingness to participate in the study, as they might have felt that there was no need to enrich the language further. In the next sections, figures and tables based on pre-project questionnaire coding, post-project interviews, students' diary notes, the researcher's personal log book notes taken throughout the 10 weeks' study, and pre-test and post-tests results, will be presented. The data are presented under themes that originated from the design of the research instruments.

4.2. Questionnaires (Participants reporting prior experiences and attitudes to learning)

According to Table 4.2, the number of participants in the two gender groups are almost the same, but from totally different linguistic and cultural backgrounds; Arab, Chinese, Cypriot and Thai. The majority of them are aged between 25 and 35 years and the remaining are aged between 16 and 24 years. Regarding their studies, 16 participants were attending pre-sessional classes at the time of the study and the remaining 4 were from the previous year's pre-sessional course, who had completed the course at the time of the present study, and had started attending their Masters degree courses. These 4 participants had also participated in the professional intervention that took place in 2015 and 2016 (briefly introduced in the Methodology chapter) and had expressed immense satisfaction with their vocabulary development. They were willing to participate again and to take advantage of the new set of words that was prepared for the main study. Their positive feedback, motivation and enthusiasm to remain in the study is further discussed in the upcoming chapters.

Number of responses: (N= 20)							
Q1. Gender:	Male: N=9			Female: N=11			
Q2. Age group (years):	16-24: N=8	25-35: N=12		36-45: N=0		46-55: N=0	56+: N=0
Q3. Nationality:	Chinese: N=7	Jordanian: N=1	Cypriot: N=1	Thai: N=1	Libyan: N=7	Morocco: N=1	Saudi: N=2
Q4. Course	Pre-sessional: N=16		Pre-sessional done now BA: N=0		Pre-sessional done now MA: N=4		

Table 4.2 General demographics

Regarding their learning experiences (questions 5 and 6) shown in Table 4.3, 16 out of 20 participants were enrolled on a pre-sessional summer course and were actively attending language classes for developing their language. However, as mentioned previously, 4 out of 20 had completed their pre-sessional course the previous year and, at the time of the research study, they were attending their major degree courses. As with their previous learning experiences in their home countries, all of them had attended English language classes to the proficiency or an equivalent level. Before coming to study in Britain, almost all international students are required to provide an evidence of language proficiency that should confirm their ability to cope with the demands of the studies at a university level. The most popular test for international students intending to study in Britain is IELTS, with a minimum score of 4.5 out of the highest 9.0 score, which the majority of the participants had obtained. Alongside the usual and formal English language classes and English language textbooks, the participants had also learned the language through other informal and personally preferred methods, such as watching TV, listening to music, having a face-to-face interaction with other English language speakers, using online sources as well as being actively engaged in social media platforms that shows familiarity with the social aspects of language learning. Responses to questions 7, 8 and 9, shown in Table 4.4 show the participants' IELTS scores in details.

Q5. Past learning approach(es):	EL Classes + EL Books: N=5	EL classes + EL books + TV+ face to face interaction: N=4	EL classes + TV/Films: N=2	EL classes + EL books + TV+ Online/ Websites (TED Talk): N=1	TV + 1-2-1 Online: N=1	EL classes + EL books + TV+ online learning +face to face interaction: N=2	EL Classes + El Books + Google translation: N=3	TV = Self-study through listening to music: N=2	EL Classes + socialising through social networks: N=0
Q6. Current learning approach(es):	EL Classes + EL Books: N=6	EL classes + EL books + TV+ face to face interaction: N=2	EL classes + TV/Films: N=5	EL classes + EL books + TV+ Online/ Websites (BBC Learning): N=1	TV + 1-2-1 Online: N=0	EL classes + EL books + TV+ online learning +face to face interaction: N=3	EL Classes + El Books + Google translation: N=0	TV = Self-study through listening to music: N=0	EL Classes + socialising through social networks: N=3

Table 4.3. Learning experiences

As can be seen in Table 4.4, despite attending the course in their home countries and having produced the IELTS certificate as the evidence to study in the UK, none of the participants had managed to obtain a score higher than 5.5. While this score (obtained in their home countries) is acceptable for most degree courses in Britain, the expected language output is equivalent to upper-intermediate or advanced level knowledge of the English language. However, this is not the case; despite obtaining a score of 5.5, the majority of these participants are only capable of producing a language equivalent to the lower intermediate or 4.0 score, as observed during classroom activities, mainly during productive language skills such as speaking and writing. As a result, pre-sessional courses are arranged that aim at developing their language to the UK-based language standard of IELTS 5.5 or above. Having said that, the focus of the pre-sessional courses is usually on developing academic language skills, and little attention is paid to general English vocabulary knowledge, which is also expected to have been achieved in IELTS classes in the participants' home countries. In Table 4.4, in questions 8 and 9, participants were asked about their opinion on what could or might have resulted in the development of their English language since arriving in Britain. Their responses are quite similar to the responses in Table 4.3, where participants believe that language practice outside the classroom in a social setting is as important as instructions received inside the classroom.

Q7. Examination taken and score:	IELTS: N=20		4.5: N=2	5.0: N=12	5.5: N=2	6.0: N=0	No response: N=6	
Q8. EL improved in Britain:	S/agree: N=4	Agree: N=8	Neither agree nor disagree: N=7			Disagree: N=0	S/Dis: N=0	No res: N=1
Q9. Reasons for language development in Britain:	Pre-sessional course and coursebooks: N=9		Immersions + socialising and social media: N=8				Other reasons: N=3	

Table 4.4 The development of learners' English language in Britain

In Table 4.5, responses are shown when the participants were asked about their opinion of technology use for language learning (questions 10 and 11). Sixteen out of 20 participants agreed and supported the use of technology. However, 4 of them, who were brought up with traditional approaches for learning, expressed a more neutral opinion. Participants who supported the use of technology subsequently supported the social aspect of language learning by rating the use of smartphones and smartphone applications, such as translators, dictionaries, doing online activities and the use of social media applications for chatting and socialising, amongst the highest factors that had previously resulted in their language development. On the other hand, participants who reported a neutral response towards the use of technology for language learning had not had the chance to provide reasons for their responses in the questionnaire, but the findings through diaries and interviews discussed later will definitely provide answers as to why these participants preferred to learn in traditional ways as well as adopting their inclusive approaches to learning.

Q10. Technology helps in language development:	S/agree: N=6	Agree: N=10	Neither agree nor disagree: N=4	Disagree: N=0	S/Disagree: N=0
Q11. If agree why? *(highest to lowest frequency)*	A) Online studies (N=4) B) the availability of translators and dictionaries (N=4) C) The use of social media and chatting through smartphone apps (N=3) D) can easily find learning resources (N=2) E) can learn new words + pronunciation through downloaded apps (N=1) F) watching movies (N=1) G) Youtube (N=1) H) Interaction with others (N=1) I) Messaging: (N=1) J) Saved images with repetition (N=1) K) Use of smartphones for translation (N=1)				

Table 4.5 Learners' opinion about the integration of technology in language development

In Table 4.6 (questions 12 and 13), it is shown that most of the participants expressed a preference for smartphones as the most effective tool for language development, followed by other smart devices such as netbooks, iPads and laptops. When asked if they owned a smartphone (question 13), all of them confirmed the ownership of smartphones with the internet service activated in all 20 handsets. While the availability of smartphones and the internet service activated in handsets was the main requirement for the present study, in order to install the applications and receive their daily words through their socialising applications, participants who did not own a smartphone, or did not have internet service activated in their handsets, would not have been considered suitable for the study. Fortunately enough, no such cases were encountered as all of the participants had access to smartphones with internet service enabled.

Q12. Effective tool(s) for language development:	PC/laptop + iPad/tablet + e-reader: N=4		Mobile/smartphone: N=13	Digital pocket dictionaries: N=1	Digital dictionaries installed in smartphone: N=2
Q13. Own smartphone + internet:	Yes: N=20	No: N=0	Yes but no internet access: N=0		

Table 4.6 Learners' opinion about tools that are perceived effective for language development

Regarding the frequency of using their handsets, shown in Table 4.7, most of the participants stated that they used and accessed their smartphones as often as every 30 minutes to one hour (question 14) with one participant checking their smartphone every 5 minutes. Beside the frequent use of their smartphones (whether for learning or socialising), it was useful to know that the number of participants using English as the main and only language, and the number of the students using their first language with some use of English, as the default language of their smartphones, was equal (question 15). As a result, participants showed a desire to learn English language and incorporate it in their daily activities. This question to some extent further encouraged the researcher to prioritise the social aspect of language learning and incorporate the smartphone and smartphone applications for vocabulary development in both stages of the study.

As far as using the most frequent application used in their smartphones (question 16), participants mentioned the socialising applications as the highly used applications followed by 'Google Translator' and 'Digital Dictionaries', indicating the desire to adopt an inclusive and individual learning approach. However, applications such as installed learning applications, which were used for autonomous learning, were reported as less frequently used applications, followed by the SMS or text messaging application with seldom use. As a result, the incorporation of the socialising application for the development and acquisition of vocabulary items in the present study was considered an appropriate choice, since the messages containing the target words were sent to the participants in a more interesting and colourful way, in contrast to plain SMS or text messages. Regarding participants' use of English learning applications on their smartphones, in question 17, there were 12 out of 20 participants who answered 'yes' and 8 out of 20 who answered 'no' to the question. The highest number of these 12 participants who answered 'yes' stated 'Google Translator' as their learning application. Some of the learning applications mentioned in question 17 were not used for the purpose of learning, such as 'Guardian', 'MapsChrome', and 'WeChat', each used by one participant only. The remaining seven learning applications that were reported by 7 participants were only used sometimes and as less frequently as 'once a month'.

<table>
<tr><td>Q14. Frequency of smartphone use:</td><td>Every 30 mins: N=6</td><td>Every hour:

N=6</td><td>Every 2 hours:

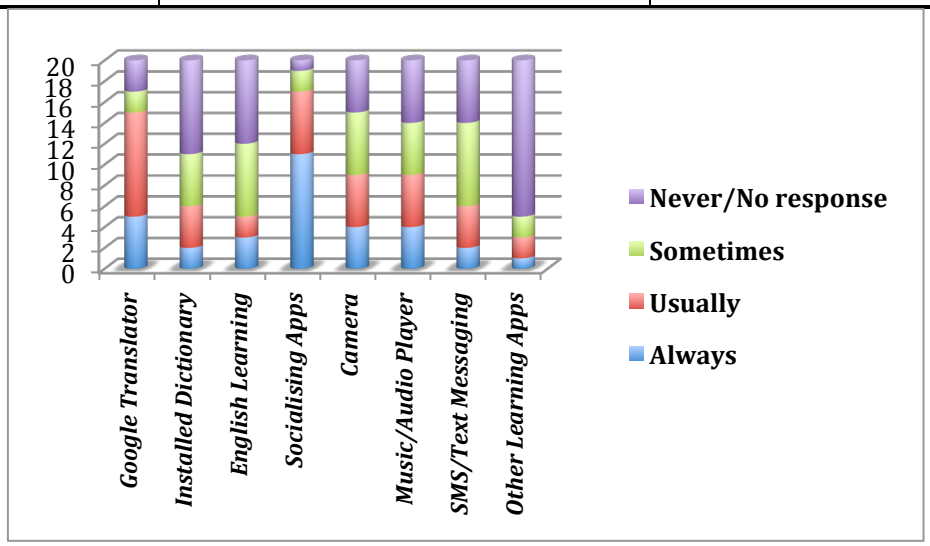
N=4</td><td>2-4 times a day:

N=3</td><td>Once a day:

N=0</td><td>Other:

Every 5 mins

N=1</td></tr>
<tr><td>Q15. Language on smartphone:</td><td>Only English:

N=8</td><td colspan="3">Mainly English + some 1st language: N=4</td><td colspan="2">Mainly 1st language + some English: N=8</td></tr>
<tr><td>Q16. Apps used most frequently on the smartphone:</td><td colspan="6"> 
</td></tr>
<tr><td>Q17. Apps used for EL learning/how often:</td><td>Yes (but not too often): N=12

If yes, which apps?

(ordered from most frequent to least frequent)</td><td colspan="3">1. Wechat (N=1, every 30 mins)
2. Google translator (N=3, everyday)
3. Maps Chrome (N=1, everyday)
4. Guardian (N=1, twice a week)
5. Combly speaking practice (N=1, every month)
6. The words cut (N=1 usually)
7. YUDOA (N=2 usually)
8. Installed dictionary (N=1, sometimes)
9. TED (N=1, sometimes)
10. (BAICI ZHAN, N=1 sometimes)
11. Listening practice (N=1, sometimes)
12. Podcasts (N=1, sometimes)</td><td>No: N=8</td></tr>
</table>

Table 4.7 Learners' responses to applications used for language development on smartphones

To sum up the findings from the questionnaires, Table 4.8 shows that all of the participants unanimously agreed that vocabulary development is an integral part of language learning and is considerably important for all language learners. Similarly, all of the participants expressed a desire to improve and develop their word knowledge, with 18 participants to a great extent and the remaining 2 participants to some extent (question 19). Their willingness to improve their vocabulary knowledge was further expressed by their ability to learn a certain number of words per day. Fourteen out of 20 participants reported '4-5 new words', 3 out of 20 reported '6-7 new words', 2 out of 20 reported '2-3 new words' and only 1 participant learnt more than 8 new words per day (question 20). The answer to question 20 not only self-reported the participants' ability to learn a specific number of words on a daily basis, but has confirmed

that the decision to send 5 new words every day in the present study would hopefully not have over-burdened the participants with their learning load.

Q18. Importance of vocabulary development:	Very Important: N=20	Somehow Important: N=0	Not very Important: N=0	Not Important At all: N=0
Q19. Desired extent of developing vocabulary:	Great Extent: N=18		Some Extent: N=2	Not bothered/not willing at all: N=0
Q20. The ability to learn a particular number of new words per day:	2-3 new words: N=2	4-5 new words: N=14	6-7 new words: N=3	8+ new words: N=1

Table 4.8 Learners' attitude towards the importance of vocabulary learning in English language

This section will now lead to section 4.3 which will present the data obtained from the interviews conducted at the end of the study, as shown in Figure 4.4, that were not only based on the participants' attitudes towards different applications used in the present study, but also how they perceived specific aspects of each application.

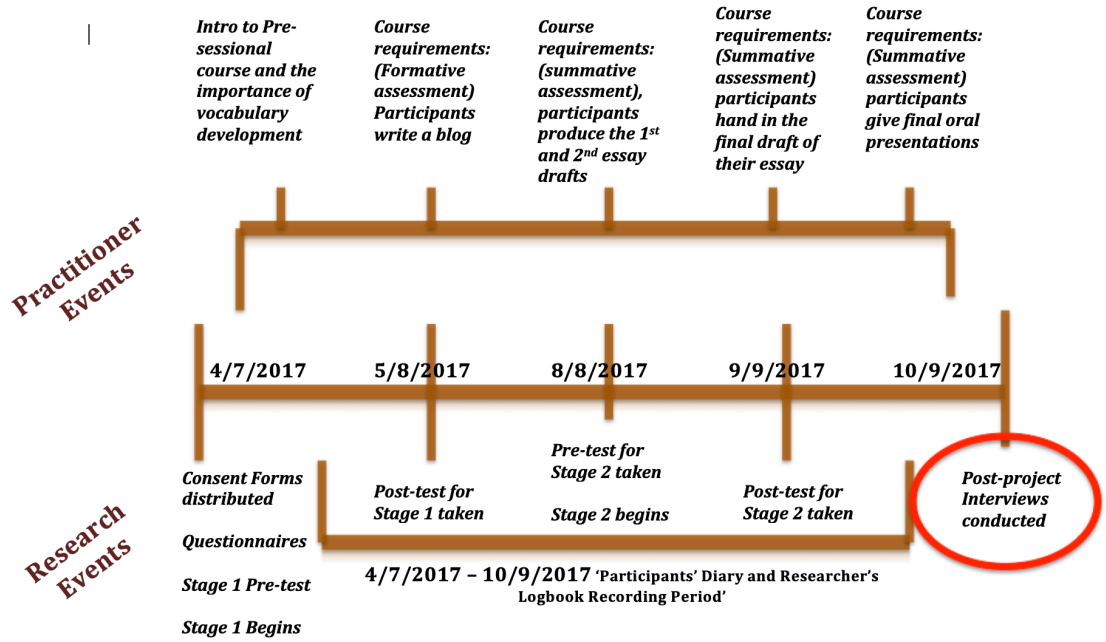


Figure 4.4 Research event on 10/9/2017 Interviews (continued over several days)

4.3. Interviews

One of the main tools for data collection was post-project interviews. The interviews provided the researcher with input that would shape the discussion section of the present study. The findings from the interviews and other research tools (diaries and logbook) will support the analysis in terms of the teacher's role in language learning, the social aspect of language learning and the adoption of an inclusive approach in language learning. The social aspect will also be discussed in the context of the effectiveness of one particular application and what could have been done to achieve similar or better results from the second type of application. The responses to the questions in the interviews revolved around the following seven key themes:

1. Perceptions of traditional approaches for vocabulary acquisition.
2. Perceptions of using the installed applications for vocabulary acquisition.
3. Perceptions of using the socialising applications for vocabulary development.
4. Perceptions of participants' satisfaction with the two types of applications for vocabulary acquisition.
5. Perceptions of technical and non-technical challenges faced by the participants during vocabulary acquisition.
6. Perceptions of personal practices for vocabulary acquisition.
7. Perceptions of future opportunities for vocabulary acquisition.

The seven themes will be described and structured to provide a reasoned outcome, with components of the interview that are perceived redundant or irrelevant removed (Svensson & Theman, 1983, cited in Akerlind, 2012). While the seventeen questions in the interview were both closed and open-ended, the majority of the answers to the closed questions were similar. For example, all twenty participants answered 'no' to the question about 'cost incurred' for using their smartphones during the study. The open-ended questions on the other hand provided answers that were based on the attitude and perceptions of individual participants and therefore resulted in a variety of individual responses. For a complete and detailed example of interview coding, see Appendix 13B. The following sub-sections will present the data obtained from the interviews under seven themes, which are based on answers to the 17

questions asked in the interviews. Each theme will be further supported by tables where examples of supporting quotes from participants illustrate key points.

4.3.1. Perceptions of traditional approaches for vocabulary acquisition

The results from the initial interview question **(question 1)** implied that 12 out of 20 participants preferred the integration of technology in learning, and for developing their vocabulary, for its ease of access, availability anytime/anywhere and the fact that learning with technology is popular. Four participants preferred both technological and traditional approaches and the remaining 4 participants preferred the non-technological approaches, because of previous learning experiences, physical attachment with the learning materials and the fact that technology might not always be reliable (see category descriptions and supporting quotes in Table 4.9).

Traditional approaches	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
Previous Learning Experience **Overview:** Some participants were brought up with traditional approaches and might not easily adapt to modern learning approaches. Also, in some developing countries there is a lack of technological infrastructure in educational institutes, as a result, learners are still exposed to traditional approaches, which they take with them even when studying abroad. However, the use of traditional approaches may not always be effective in a country where technology is used as the main source of delivering lessons.	*"Technology is complicated and expensive"* Participant number 15 (below average performance in both stages) *"Phones are for talking and chatting not learning"* Participant number 19 (below average performance in Stage 2 and zero in Stage 1) *"Communication with native speaker"* Participant number 5 (above average performance in Stage 2, zero in Stage 1) *"Writing the new words down 10 times followed by memorization and translation into first language"* Participant number 19 (below average performance in Stage 2 and zero in Stage 1)
Physical Attachment to the Materials **Overview:** Carrying a paper book and a hard-copy diary may no longer be fashionable and may seem outdated. But for some learners, it is a bond created with the materials that	*"Real feeling of learning by touching your resources like books and sticky notes"* Participant number 20 (average performance in Stage 2, zero in Stage 1) *"I am able to read and revise with sticky notes without*

Traditional approaches	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
subsequently creates an experience of 'real' learning with traditional approaches that might not be obtained with the use of technology. In this case, the use of sticky-notes is reported to be effective for vocabulary development.	*planning, even when cooking"* Participant number 14 (below average performance in Stage 1 and average in Stage 2) *"Same note and screen without moving, but phone screen moves and changes"* Participant number 20 (average performance in Stage 2, zero in Stage 1) *"I like to learn new words on the wall, old words in bin"* Participant number 16 (below average performance in Stage 2 and zero in Stage 1)
Problems with Technology **Overview:** While the integration of technology in language development may be widely accepted and a modern approach, it is not always effective. Similarly, some of the learners in the present study had come from slightly indigent backgrounds, sponsored by their government to study in Britain and were therefore not able to afford expensive and latest smartphones, and hence faced unpleasant technical experiences. Moreover, the frustration caused by technical and functional problems with technology may result in hindering the learning.	*"Lack of technological resources in home country"* Participant number 16 (below average performance in Stage 2 and zero in Stage 1) *"Dictionaries are expensive to install"* Participant number 19 (below average performance in Stage 2 and zero in Stage 1) *"Problem with phone memory, uninstalling and reinstalling the apps"* Participant number 20 (average performance in Stage 2, zero in Stage 1) *"I am traditional learner and don't use phone much"* Participant number 19 (below average performance in Stage 2 and zero in Stage 1) *"The messages and messaging tone kept distracting and disturbing me"* Participant number 15 (below average performance in both stages) *"My phone kept freezing"* Participant number 1 (average performance in Stage 2, zero in Stage 1) *"Lost my phone and lost all messages and apps"* Participant number 20 (average performance in Stage 2, zero in Stage 1)

Table 4.9 Participants' attitude towards traditional approaches

According to responses in Table 4.9, despite the ever-increasing development of language-related technology and increased number of 'tech-savvy' students, web-based programmes

and mobile applications alone do not guarantee success in vocabulary development. Traditional tools such as pen and paper, flash-cards and note-taking might still be essential and could amplify the chances of intensive vocabulary learning, instead of considering them obsolete. It can therefore be claimed safely on the basis of this sample that modern technological strategies may not be the absolute answer to enhanced learning, but the integration of traditional approaches may also be required. Although the central research question and the focus of the present study is on smartphone integration in developing vocabulary items, it does not imply that other traditional, non-technological and individual learning approaches are eliminated from the discussion and the analysis of learners' achievement. To sum up, the majority of the participants who performed on average and above average levels in the present study had also incorporated traditional as well as their own learning approaches as displayed in Table 4.9.

4.3.2. Perceptions of using the installed applications for vocabulary acquisition

The smartphone applications used for vocabulary acquisition were categorised into two groups - socialising applications and installed or downloaded applications. From the findings in the present study, the majority of the students were constant and active users of the applications used for both socialising and learning **(question 2)**. The most popular installed application used by almost every English language student and the majority of the participants in the present study was 'Google Translator', as previously mentioned. It was mostly preferred for its availability in most of the students' L1, alongside multiple definitions and examples, which were also provided in the Stage 2 socialising applications incorporated for teaching the target words. Other features available in the Google translator that made the application the most used and accessed, were the availability of pronunciation and derivatives or word-families. While Google Translator offers all of the aforementioned features and makes the learning effective, the Google search engine provides images of most of the words, a feature which has also been chosen as the most liked feature in the Stage 2 learning of the present study "images". The students preferred the availability of multiple aspects and features of any resource, which can make the learning easier and interesting, instead of plain definitions and examples provided with the new words (as in Stage 1). Also, with regard to the installed applications incorporated for learning **(question 6)**, it has become evident from the findings in Table 4.10 that installed applications are accessed less often and, in some

cases, not opened again after the initial installation. Some participants also reported lack of motivation and procrastination in learning with the installed applications. Similarly, no or very little attempt was made at learning **(question 15)**, and the application was mostly forgotten, not opened and not used for learning (see category descriptions and supporting quotes in Table 4.10).

Technological approaches (installed app)	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
Available Anytime, Anywhere **Overview:** The majority of the latest smartphones offer a plethora of learning applications that might be popular, downloaded by thousands of users and highly rated as well. The fact that an entire selection of words is available on a tiny handset and can be anywhere, anytime, encourages the majority of language learners to go for such installed applications.	*"Available anytime, anywhere"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1) *"Regular updates and new features, available anytime and anywhere"* Participant number 14 (below average performance in Stage 1 and average in Stage 2)
Modern Learning Approach **Overview:** Most of these applications are not opened for planned learning, but rather used asynchronously, used to pass time, while waiting and used in public where there is a lack of verbal communication and the contagion of everyone fiddling on their smartphones.	*"I like spending time on my phone"* Participant number 1 (average performance in Stage 2, zero in Stage 1) *"Who doesn't learn with technology anyway"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1)
Overall Opinion of the Installed App **Overview:** As mentioned above, language learning applications might seem popular and installed by numerous users. However, it is equally important to research the effectiveness of the application, the comments of the users in the 'Review' section, the number of stars given to the effectiveness of the application by the users and most importantly know the developer of the application, whether an individual or institutional.	*"They are useful but they take memory of my phone"* Participant number 14 (below average performance in Stage 1 and average in Stage 2) *"Installed app was boring, didn't even open the app, the meanings in installed app were more difficult than the actual word"* Participant number 17 (below average performance in both stages)

Table 4.10 Participants' attitude towards technological approaches (the installed app in Stage 1)

The installed applications according to the quotes in Table 4.10 may be considered suitable for revising or testing existing knowledge of vocabulary items. If not known or new, they could be saved in a 'favourites list' or 'notes' folder, and several encounters will subsequently be required not just through the applications, but other digital tools as well. However, there is much to know and consider when recommending applications to learners for vocabulary development. To begin with, not every installed application should be trusted and found reliable **(question 10)**. The user may start with reading other users' reviews and the number of stars given to the application's efficiency as well as efficacy. Most vocabulary applications are created and developed by former non-native EFL/ESL students. Although most of the low-rated applications are usually free to install, compared to the purchased ones by the native British speakers or organisations such as Cambridge, Oxford, BBC, British Council or Trinity Examination, they usually entail grammatical and spelling errors. For instance, the installed application instructed for vocabulary development in the present study contained spelling mistakes (IELTS WordList, 'Lesson' spelt as 'Lession' (see Figure 4.5).

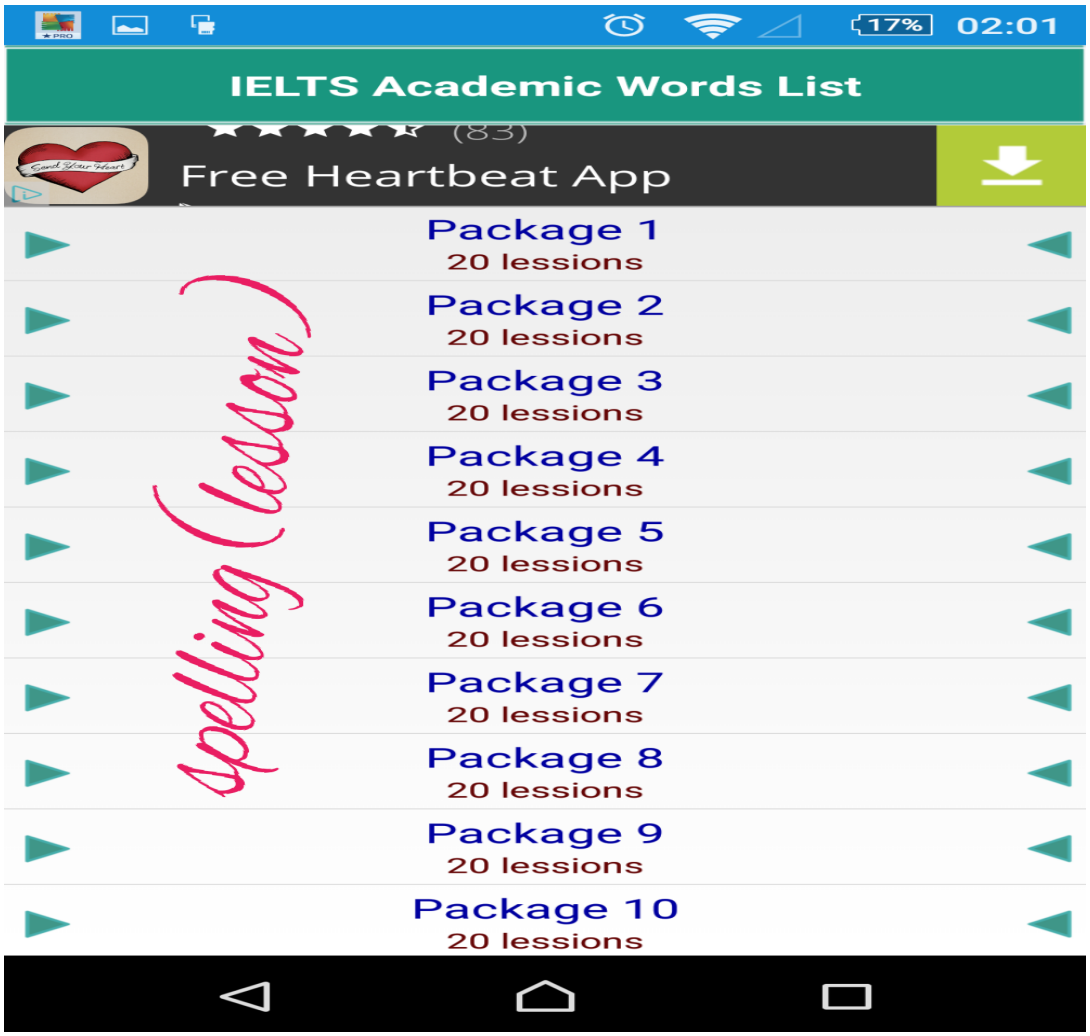


Figure 4.5. An example of a spelling mistake (the installed app in Stage 1)

4.3.3. Perceptions of using the socialising applications for vocabulary development

As presented above, the installed application is usually reported to be less interactive and used in isolation when compared to the socialising applications that are used in groups and interactive online learning communities. Moreover, and according to findings **(**from **questions 2, 4, 13, 14, and 16)** the socialising applications which are primarily used for chatting and social purposes are perceived to be more effective, 'fun' and diversifying the learning experience. In addition, and most importantly, as can be seen in Table 4.11, the interaction between the learners in groups and the involvement of a human facilitator had made the learning real and more active with socialising applications. Student participants were actively involved in the learning, by receiving, seeing or reading and responding to the messages in the groups which were monitored by the researcher in all of the socialising applications used in the present study (see category descriptions and supporting quotes in Table 4.11).

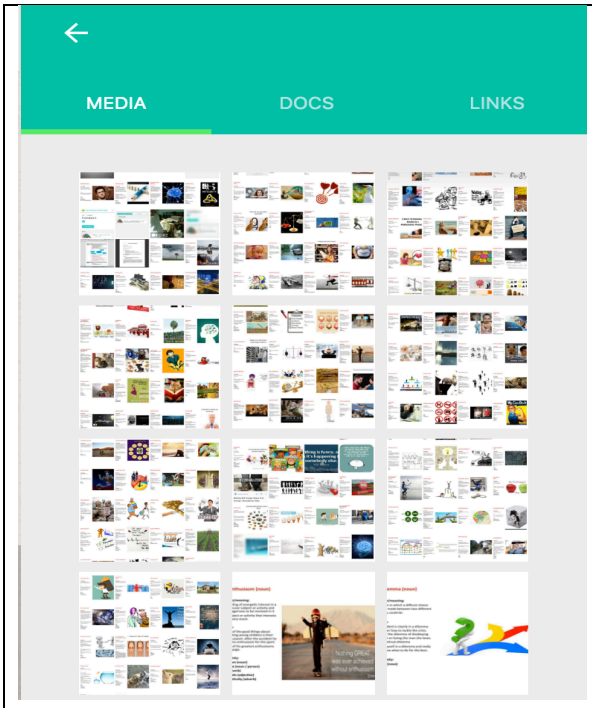
Technological approaches (socialising apps)	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
Use of Media **Overview:** The socialising applications are reported to be more interesting, fun and interactive when compared to the installed application. Learners felt more satisfied not only with the use of the applications, but also with their language progress.	*"I like learning with videos and images"* Participant number 17 (below average performance in both stages) *"I learn better with pictures and I learned in a new and interesting way"* Participant number 10 (outstanding performance in Stage 2 and below average performance in Stage 1) *"I like to send emojies and photos"* Participant number 18 (above average performance in Stage 2, below average performance in Stage 1) *"Not only me, learned the words but my friends too with forwarded messages"* Participant number 14 (below average performance in Stage 1 and average in Stage 2) *"I save words with photos in media and access later"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1)

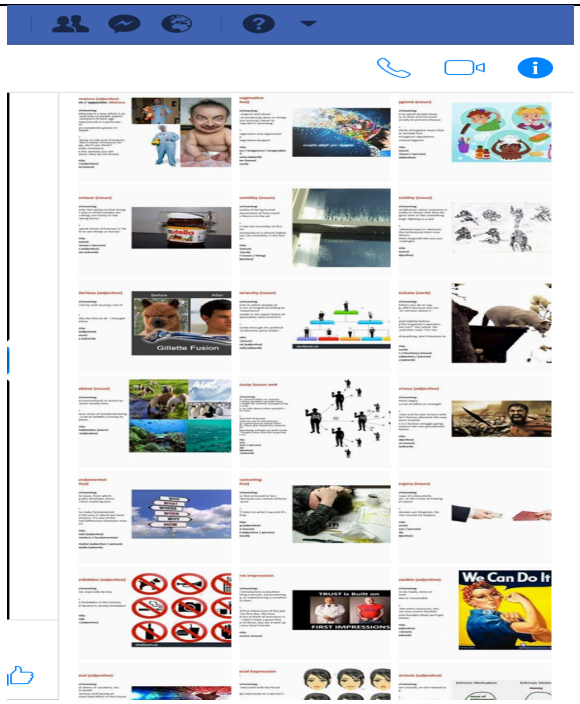
Technological approaches (socialising apps)	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
	"Fun and interesting" Participant number 18 (above average performance in Stage 2, below average performance in Stage 1) *"I liked the pictures and pronunciation"* Participant number 7 (average performance in both stages)
Collaborative Learning **Overview:** Contrary to the isolated learning in installed application, the socialising applications were more collaborative and interactive, that allowed the learners to learn in a group, while the teacher is still in charge of the instruction and delivery of learning materials.	*"I can share my learning with others"* Participant number 12 (above average performance in Stage 2, below average performance in Stage 1) *"There was a sense of competition, I like learning in group than learning alone"* Participant number 8 (above average performance in Stage 2, below average performance in Stage 1) *"Because all my friends use these apps"* Participant number 15 (below average performance in both stages) *"These apps are easy to use and understand, they are popular"* Participant number 11 (below average performance in Stage 1 and average in Stage 2) *"If I become a teacher, I will teach on these apps too"* Participant number 6 (outstanding performance in Stage 2 and zero in Stage 1)
A Unique Experience **Overview:** The socialising applications have certainly been used previously, by the participants, but probably mainly for socialising purposes. To have them used for learning informally, to the majority of the participants, it was a new and a unique experience and a positive one.	*"Everyday learning and teaching"* Participant number 5 (above average performance in Stage 2, zero in Stage 1) *"Real learning with real teacher"* Participant number 15 (below average performance in both stages) *"Not only me, learned the words but my friends too with forwarded messages"* Participant number 14 (below average performance in Stage 1 and average in Stage 2) *"Able to learn a fixed number of words, not a whole list"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1) *"Appreciate the teacher's hard job and teaching with love"*

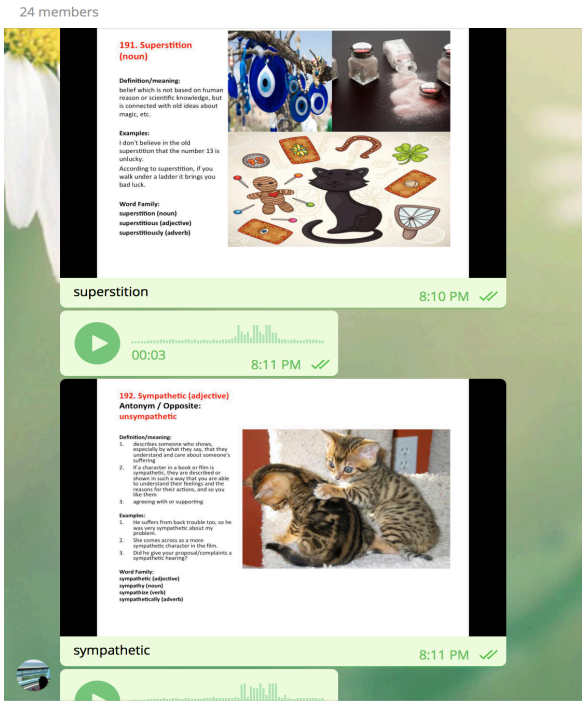
Technological approaches (socialising apps)	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
	Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1) *"Fun, interesting and very effective"* Participant number 18 (above average performance in Stage 2, below average performance in Stage 1) *"It was something new and therefore interesting"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1) *"I loved the pictures and learning in group"* Participant number 9 (outstanding performance in Stage 2 and below average performance in Stage 1)

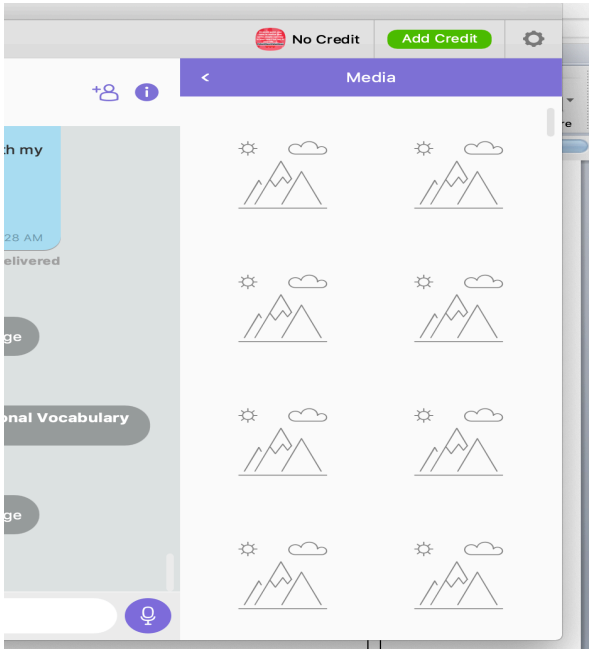
Table 4.11 Participants' attitude towards technological approaches (the socialising apps in Stage 2)

As expected, the majority of the participants not only enjoyed learning with socialising applications, but benefitted from the informal instruction in the comfort of their homes, while developing their academic word power. Most of the participants were successful at using these words in the classroom during group discussions as well as in writing practice sessions. The more motivated participants not only took pride in their verbosity and showing off the use of the new vocabulary items in the classroom, but they also confirmed that informal learning was taking place successfully, helping them in the formal practice of their academic studies. Moreover, their production of the new words not only confirmed a fruitful outcome of the rationale for conducting the study, but also acknowledged the fact that a teacher's additional work outside the classroom was making the instruction easier inside the classroom, while saving time and efforts that would have been spent on pre-teaching vocabulary during the lesson. Figure 4.6 shows how the words were prepared for the participants and sent across different platforms (WVTFM).









For some technical reasons, the media folder in the Viber app won't display the sent images. The scrolling icon though confirms that numerous images are sent to the group.

Figure 4.6 Images sent to participants on socialising application/image from a media folder in the apps

4.3.4. Perceptions of participants' satisfaction with the two types of applications for vocabulary acquisition

According to responses to **question 5,** as far as preference for a particular aspect of the socialising applications is concerned, 'images and visuals' are amongst the most liked features, followed by audio clips or pronunciation of the words. There have only been a few "least liked" features reported with the socialising application **(question 14)** and they were:

> *'Technical problems with the mobile handsets'*
> *'Distraction because of the constant notification tones of the new messages sent'*
> *'Participants not willing to allocate out-of-class hours towards learning'*

As for the installed Stage 1 AWL application, most of the participants' overall opinions were positive but perhaps less supportive in the development of their vocabulary as reported in **question 15**, when compared to the socialising applications. As was seen in question 15, only 3 out of 20 participants liked the installed AWL application and reported positive outcomes. Furthermore, 6 out of 20 participants liked the installed application but stated that the application was not as effective as the socialising applications. The remaining 11 participants did not express a very positive view about the installed application, which resulted in little or no attempt at learning (also reported in Appendix 13B).

According to the findings in the present study (see Appendices 14 and 13B), almost all of the participants preferred the socialising applications. Nineteen out of 20 participants would definitely use them for future learning while another 1 out of 20 participants might consider doing so. The majority of the participants in favour of the socialising applications have also performed significantly better in their post-tests according to Table 4.1 and Figure 4.14. The participants' feedback on the socialising application incorporation was not only generally positive but they also specified which particular aspects of the application were mostly liked and found effective. It has been these specific added features to the socialising applications that made the learning different from any other vocabulary learning application available to install on smartphones. The first and foremost liked aspect of the socialising applications, according to the participants in the present study, has been the 'images'. Based on the results

obtained from post-tests in both stages, and looking at the significant difference in the efficacy of both types of applications, images of the target words had played a major role in the outcomes of the treatments in both stages. Participants perceived the images as the major difference between the two types of applications. Also, in terms of notifications and receiving words at regular intervals, installed applications usually send a 'word of the day' to their users. However, it was the reported attractive and interesting images used in the socialising applications that encouraged the recipient to open the notification and look forward to watching the visual image before reading the target word (see Appendix 14, participant number 13, diaries).

4.3.5. Perceptions of technical and non-technical challenges faced by the participants during vocabulary acquisition

According to responses to **questions 10 and 11**, the majority of the participants had not reported any major problems encountered during the study, with the applications implemented in both stages, only 3 out of 20 participants experiencing unpleasant incidents. The problems included:

- 'Losing their phone'
- 'Low storage/memory in handset that has prevented them from installing the apps or running the apps efficiently' (also found in researcher's logbook notes Monday 11/07/2017 and Thursday 14/07/2017, Appendix 15)
- 'Shared learning in socialising groups, where group members were able to access each other's contact details (see also researcher's logbook notes Friday 12/08/2017, Appendix 15), which could have prevented the female participants from taking part in the study'

4.3.6. Perceptions of personal practices for vocabulary acquisition

Questions 3, 7, 8 and 9 of the post-project interviews focused on other non-technological approaches used by the participants for their vocabulary acquisition. These are approaches other than traditional or technological but unique to the participants. The following

approaches were not instructed or prescribed by the researcher but used by the participants as a result of previous learning experiences and individual differences. These approaches, which can be seen in Table 4.12, also contributed towards the successful development of their vocabulary knowledge (data collected from interviews and diaries). Participants' independent learning approaches were included: watching movies, dramas, real-life TV; sticky notes around the house; associating words (adjectives) with friends or relatives who might have the same qualities or characteristics; voice-recording of new words or audio books; listening to them while in bed; teaching the new words to other peers or friends and as a result mastering the words themselves; some online websites or chat groups (weSpeke); and applications installed on smartphones used for learning new words (see the category descriptions and supporting quotes in Table 4.12).

Individual learning approaches	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
Visual Learning **Overview:** The availability of visual materials for learning online, on TV and on mobile handsets have already dominated the attention of most language learners. The most popular visual material is considered to be videos, and while some learners watch videos in the target language for fun and pleasure, others watch it for enriching their target language, which according to the results in the present study, could prove to be effective.	*"Watching videos solves understanding different accents problems"* Participant number 18 (above average performance in Stage 2, below average performance in Stage 1) *"Improves listening and reading and pronunciation"* Participant number 15 (below average performance in both stages) *"You can pause video to copy the new words"* Participant number 15 (below average performance in both stages) *"Real situation to learn the words in but miss faces while reading"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1) *"Watch the meaning not guess"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1)
Auditory Learning **Overview:** Alongside visual stimuli, some learners also find listening to the target language effective. It has also become a fashion to be out in public with headphones on and have the target language practised while looking cool. Fortunately enough, some of the	*Limited data has been obtained in this category through **interviews**, but sufficient support for auditory learning is provided in participants' **diary entries** (see diary notes, where participants have stated when and how they incorporated auditory learning by recording their own voices in their handsets, or saving other audio materials for practice).*

Individual learning approaches	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
participants in the present study had also followed the norm and reported positive outcomes as a result.	
L1 Translation of the Words **Overview:** Similar to the statement in the overview of the traditional approaches above, L1 translation is also the standard learning approach for the majority of the learners, and almost all of the participants in the present study who had not shown favouritism towards mono-lingual English dictionaries.	*"I need to know the meaning in my first language, sometimes they are not accurate"* Participant number 16 (below average performance in Stage 2 and zero in Stage 1) *"It speaks my mother language"* Participant number 17 (below average performance in both stages) *"I grew up with words in English and meaning in first language"* Participant number 16 (below average performance in Stage 2 and zero in Stage 1) *"I can not understand English to English translation"* Participant number 18 (above average performance in Stage 2, below average performance in Stage 1) *"It is easier to understand"* Participant number 19 (below average performance in Stage 2 and zero in Stage 1)
Mnemonics **Overview:** Learning a new word and retaining its meaning is not always easy and requires different techniques. Each technique is unique to the individual and might not be so effective to another individual. The participants in the present study had also applied their own individual techniques which had made remembering the words for longer possible and easy.	*Likewise, limited data has been obtained in this category through **interviews**, but sufficient support for mnemonics technique is provided in participants' **diary entries** (see diary notes provided by the participants about their mnemonic techniques and how it has helped them learn and retain their new words).*

Table 4.12 Participants' attitude towards their own individual learning styles and approaches

Smartphone applications (socialising applications in particular) have certainly proven to be effective in vocabulary development and were encouraging at least 16 out of 20 participants to learn more words with their 'fun', non-educational features that were used for educational purposes. These 16 participants had not experienced learning with these applications

previously and they perceived the approach to have significantly improved their vocabulary knowledge as reported in Table 4.1. The positive outcomes have mainly been due to:

- the informal learning setting outside the classroom, while covering formal instructions for in-class use
- the involvement of a professional educator, especially when the learning community is less formal, but more social
- the availability of learning materials in the students' pockets while most of the course contents are not portable or storable in smartphones

The above points have certainly assisted and motivated the learners to continue with learning through socialising applications. Nonetheless, despite the aforementioned benefits, one approach is not always the absolute answer to every individual learner's learning approach. There may well be other approaches to learning that are unique to an individual learner and that may not be found in any technological device. Each individual learning approach used will be presented in detail following, as categories (A – F). Also, students reported 'meta-cognitive, effective, cognitive and social-interactive strategies' (http://modules.lancaster.ac.uk/course/view, 2018) as their preferred and effective strategies for learning that will be discussed first.

The meta-cognitive strategy guided the learning process for the participants in terms of supporting decision-making, planning, time-management and how they organise information as well as managing the information resources to maximise their learning. In this case, their smartphones, the applications or other own-preferred materials available to them on their smartphones, as well as the access and portability, aided the learning. Second, regarding effective strategies, participants' motivation to learn, their self-perception as fluent speakers of the target language and their confidence to produce the language in the classroom, could be examples of strategies developed by the participants. Third, in terms of cognitive strategies, the participants had developed mnemonic techniques, where they had grouped and recorded the vocabulary items in personally useful and memorable ways (see Appendix 14, participant number 7, referring new words to friends). Finally, and as far as social-interactive strategy is concerned, the present study was based on socialising applications, which enabled the learner participants to collaborate in groups and build the network of support and practice.

Next, the individual learning approaches adopted by the participants, **A-F**, are presented:

A - The majority of the participants who had not been brought up with technology use for learning reported the use of hand-written sticky notes and paper storybooks, whereas the 'tech-savvy' participants reported a frequent use of smartphone translators as well as TV subtitles. Whether sticky notes or a more modern TV subtitles option was chosen, the translations of the English words into the participants' L1 was opted for by everyone. Regardless of their language level and the difficulty of the meaning of the words, all of the participants had shown preference for the direct translation of the English into L1, for its convenience in understanding the meaning of the words, instead of English-to-English translation. On this basis, the use of L1 should not only be encouraged outside the classroom, but should also be implemented inside the classroom where possible. While L1 use may have been banned and forbidden for many reasons in the past, but with clear guidelines for effective use of the L1, the use should be promoted, not banished (according to Haines, 2014). The meaning of the target language can be as difficult to understand as the target word itself. From the notes in the diary, according to participant number 7 (Appendix 14), it is usually 'fun', interesting and effective when words from English language are translated into L1 slang and idioms and if possible applied to a friend or relative; for example, *'Mark is so frugal he goes to bed hungry'* (translated from a student's L1).

B – With regard to the above statement from the participant, despite the popularity in recent non-traditional teaching approaches, some learners prefer other similar learning strategies that they have been brought up with such as rote-learning for memorisation. Nevertheless, this approach could be effective if integrated with approaches that are more modern. Participant number (10), who out-performed most of the other participants and in both Stages (1 and 2), who was attending the pre-sessional course only to improve his grammar and enhance academic writing skills, is such a case. This participant claimed to have first memorised most of the entries in the dictionary available to him (Cambridge Advanced Learner's Dictionary) without paying much attention to the context in which these few thousand words are used. After the successful memorisation, he had then begun to watch TV programmes, news, dramas, movies and documentaries in order to recall and revise the memorised words in their appropriate contexts.

To further strengthen the case, rote-learning and memorisation is possible and popular among Eastern Muslim children particularly from Afghanistan, Pakistan, Bangladesh, Iran, and India who do not speak Arabic or understand the meaning of Arabic words, but manage to successfully memorise the entire holy book of Quran in the Arabic language, which is approximately 604 pages, 320,015 words and more than 6,000 verses (https://www.quora.com, no date). The claim that memorisation is possible without understanding the meaning is also strengthened in a study by Saleem (2015), who states that the memorisation of the Quran by a non-Arabic speaker is possible and doable, not because the memorisers want to learn or understand the language, but their extra linguistic factors such as identity, motivation and intention make the memorisation possible. Apart from the above claim, some Arab student participants were noticed reading from and memorising phrases and sentences from the course book during the lesson, which confirms the fact that rote-learning for memorisation has not become obsolete.

Likewise, some participants asked for the word-lists of the entire 400 target words at the beginning of the study and took the list away with them. When asked why, they responded that they are used to the traditional approach of rote-memorisation and the words received on applications daily could serve as revision. Other learners and participants also wondered, why not send all of the 400 words in one go and let the learners use their own learning approaches? The answer to this question was that the first type of application (installed) implemented in the study was already serving the '200 words available from the beginning' list. Also, receiving all of the 400 words on their smartphones in the first week would have resulted in some participants dropping out of the study and exiting the groups, as they would have already received the entire list, so why get disturbed by the frequent notifications from the researcher? Most importantly, and according to previous studies mentioned in the introductory chapter of the present study, providing learners with words at regular intervals and spaced sessions could be more effective than the words learned in concentrated bursts (Thornbury, 2004). The present study was different to the prescriptive traditional approaches that were not based on technology and smartphone integration, but also allowed participants to use their individual learning approaches.

Teaching, learning and assessment approaches vary from country to country and one cannot expect learners to adapt to the learning approaches in the new environment easily. But the students and participants in the present study were fortunately homogeneous in terms of their learning approaches. Having asked and discussed about previous learning approaches in their

home countries, the Chinese, Libyan and other Arabs and eastern students shared the same traditional, structural learning approach, which was usually memorisation by rote-learning. Despite the previous learning approaches, the majority of the participants managed to adapt to the new technologically orientated learning approach and perform significantly well without having to memorise any words for the tests. This is because the post-tests were conducted immediately after the study and the participants did not have the opportunity to revise for the tests.

C – Most of the participants in the present study mentioned sticky notes and other similar flashcards to be effective, whether traditional paper-based or technologically developed smartphone-based flashcards. When comparing paper-based flashcards with electronic flashcards, the study by Alzahrani (2015) showed the effectiveness of mobile-based flashcards. This is contrary to participant number 13 in the present study, who preferred paper-based flashcards despite not being a modern approach. The reason was that mobile telephone screens show only one card at a time whereas in paper-based flashcards there is a chance to look at more than one card simultaneously and have visual access to many cards at the same time. Similarly, in order to support visual learning further, participant number 13 also reported capturing Google Images on the smartphone, which were based on the new words and saving them as a wallpaper or background photograph on the home screen. For a repetitive or subsequent exposure, each time the mobile handset was accessed for calls and text messages, the exposure to/with the new word took place, though looking at the wallpaper and being able to revise the target word without having planned to do so.

D – Moving on from auditory learning (learning with audio files), to visual learning (learning by seeing and reading contents), to spontaneous learning, unplanned and spontaneous learning was also reported to be happening with movies and dramas on TV. Students would like to learn a language subconsciously through TV, radio or a post shared on Facebook. While Facebook and other social media sites might be perceived helpful and effective for language development, they may not encourage the majority of the learners to interact in L2, writing or the production of a post in L2. This is due to the lack of confidence and competence in L2 or the target language, though reading others' posts in English could be helpful. It can be stated that in terms of the receptive knowledge such as reading and listening, social networking sites could be helpful but with regard to the productive aspect such as writing or commenting on a particular post or status, learners prefer to use their first language in order to avoid embarrassment and humiliation from friends or contacts, in case there is a language error in

their comment. The discussion chapter will elaborate further on TV programmes and their effectiveness.

E – The next biggest factor in any language development is 'Immersion'. Language learning applications are usually popular in a country where the target language is not the native or main language of the country, for example English in the Middle East or China, but probably not so popular in the target language country such as Britain or other English speaking countries. One possible explanation could be because immersion into the target language is better and more effective than any other learning application, since there is a real interaction with the native speakers and more authentic ways to learn the language compared to an artificial environment. Previous research argues that age limit and length of residency affect language proficiency development. However, a study conducted by Larson-Hall (2006) based on adult Japanese residents living in the United States concluded that the duration of residency had no correlation to language accuracy. In his study, a similar English language accuracy was demonstrated by a second year and a long-term resident. In another study by Jiang, Green, Henley and Masten (2009), the English language acquisition process of 49 Chinese students who had entered the United States as college students was studied. Jiang et al. found that the extent to which the students had acculturated into the American culture correlated to language proficiency, but with a limitation on pronunciation.

Similarly, immersion and living in the target language country does not always result in being successful at language development. This is because the majority of these learners: 1. live with or share a house with people/other students from their native countries in order to avoid the feeling of homesickness and loneliness as well as feel protected by their own people; 2. there is usually a time constraint and these learners are mostly busy with studying towards their major degree courses and pay less attention to general English language development; and 3. some Arabic speaking students view the English language less positively and hold a less positive attitude towards mastering the language for cultural reasons and the fear of their native language being over-taken by another language. Unless these students and learners start living with a host family and experience language immersion, very little language development may be achieved. Therefore, living in the target language country can be pretty much the same as living in their native countries and learning the target language, because of minimum interaction with the native speakers of the target language. In such learners' opinions, the extent to which mastery in the English language is required, is the extent to which they are only able to cope with their studies at university. In the researcher's logbook

notes in Appendix 15, one of the participants showed a desire to develop his language through acculturation and immersion, but feared being rejected by his fellow Arab friends for living with a non-Arabic speaking host family.

F – Learning by teaching: teaching newly-acquired words to others is an excellent approach towards vocabulary development and could result in mastering the word by teaching it, soon after learning it. One successful story in the present study could be that of participant number 9 (see Appendix 14), who was added to the Viber group, and who outperformed most of the other participants. He had created his own Viber group, just like the researcher had, and had his friends added to this group, who were not the participants in the present study. My messages sent to participant number 9 were subsequently forwarded to the group members in his group, alongside the Arabic translation to ease the learning process. This was done with my permission and while learning the new words himself, he had also become a facilitator for his group, which assisted him in mastering the newly-acquired words. This approach of 'teaching others while learning at the same time or simultaneously', proved to be very successful and effective.

The above effective strategies from A to F have been recommended by previous studies and to some extent confirmed in the present study as well. By contrast, there are certain strategies, which may seem quite popular and widely used and accepted, but probably not as effective as they are believed and perceived to be. One of these less effective strategies used for vocabulary development is the use of monolingual dictionaries. The primary reason for not using a monolingual dictionary is that the definition is given in the learner's non-native language. A problem which has also been reported in previous studies, for its syntactic complexity, idiomaticity, and cultural specificity, results in the definitions being more difficult than the word they define (Amritavalli, 1999).

As mentioned previously, almost all of the participants in the present study had opted for the L1 translation of the target words in the present study and had reservations towards using a monolingual dictionary. Some participants had their entire 200 words memorised with their L1 meaning and applied to real-life authentic examples such as friends, relatives and family members for better retention. The daily words functioned as revision and practice. They had made sentences and used them in everyday life with friends (results from diaries and interviews for those who outperformed the learning). So where does this approach leave the numerous and famous English language dictionaries such as Cambridge, Oxford and Collins?

Presumably, these dictionaries are not primarily designed for native English speakers. Non-native or English language learners mostly opt for L1 translation of the target language anyway, as can be seen from the results in the present study, where participants with translation approaches outperformed the rest. An example of this can be found in Table 4.1 where participant number 6 has learned more words after the study in Stage 2 (67% increase) and has incorporated L1 translation in his learning.

Having observed the student participants' preference for the L1 translation, and not trying the English-to-English translation, we could take the example of the word "cat" from the famous English language dictionary Cambridge. The definition for the word cat is as follows: 'a small animal with fur, 4 legs, a tail and claws, usually kept as a pet or for catching mice or any member of the group of similar animals such as the lion' (Cambridge Advanced Learner's Dictionary, 2018). Having considered the example, the following issues need addressing: 1. the native English speaker knows what a cat is and would not need to search for the definition; 2. the non-native English learner is most probably going to use L1 translation for cat on Google Translator or Google Images and see what a cat looks like; and 3. the target word cat might not be as difficult to find the meaning for as the new words that have occurred in the definition of this simple vocabulary item. For example: fur, claws, tail, pet and mice where the learner is made to search for 5 more new words and could possibly face further new vocabulary items that require a definition search (search for the definition of the definition). This is illustrated in Figure 4.7. So where does this leave the popular mono-lingual dictionaries with thousands of entries and their definitions?

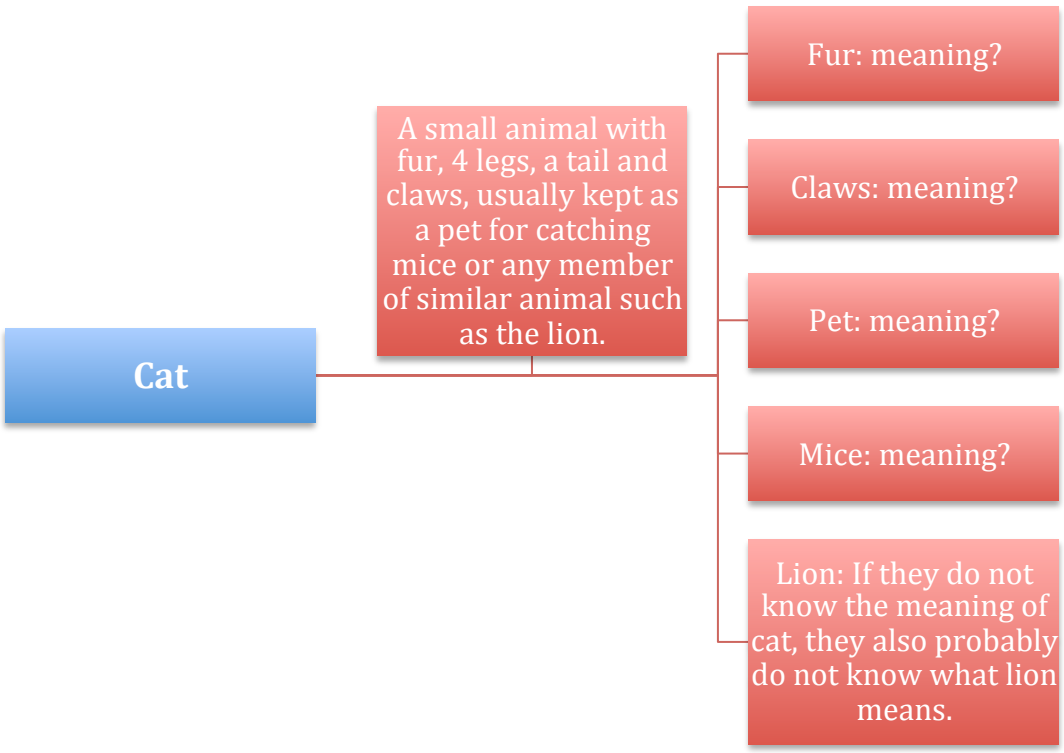


Figure 4.7 When meaning and definitions are more difficult than the word

To conclude, vocabulary teaching with instructions and prescriptions might not always be effective. Despite all the efforts of sending new words as multimedia messages in the present study, to some extent, the approach has not been a perfect solution for all participants when compared to the learning approaches which they had chosen for themselves. It is therefore necessary to allow room for learner autonomy and individually preferred learning methods. As far as the installed smartphone applications particularly developed for vocabulary enrichment are concerned, mobile applications and computer programs and other digital tools are useful for practicing revision and vocabulary reinforcement since they can hold an extensive amount of data and could be easily carried around and accessed anywhere, but may not be ideal for first encounter or learning for the first time.

4.3.7. Perceptions of future opportunities for vocabulary acquisition

As can be seen in responses to **questions 12 and 17** in the interviews, all of the participants enjoyed learning in their 'socialising groups'. They were exposed to the target language in their visual learning community, which was contrary to an isolated learning space created in the 'installed application'. Some learners were enthusiastic enough to request the researcher to

add them to more than one socialising group, in order to receive more exposure to the language and learn better and quicker. Also, when learning together, there are more chances of engaging in a learning task, responding to the activity and displaying their knowledge and competence to the other group members. To sum up, the motivation to learn in a group, the availability of different aspects of word families and derivatives alongside the target word, the involvement of the teacher and last but not least, the incorporation of images and visual illustration of the definitions that had helped the participants retain the words for longer due to having picturised and visualised the words (participants number 5, 6, 8, 9, 10, 12, 13 and 18 whose performances can be seen in Table 4.1, and diary notes in appendix 14), have undoubtedly been the significant advantages of the socialising applications. As a result, not only have 19 participants confirmed the possibility of learning in socialising groups or with socialising apps in the future in response to question 12 in the interviews, but the quotes in the rest of the students' diaries (Appendix 14, participant number 6) and researcher's notes in the logbook (Appendix 15, Notes on Friday 09/09/2017), also corroborate participants' interest in the study at present and in the future. Almost all of them would use the socialising applications for learning in the future.

To conclude, questions 1-17 in the post-project interviews provide the following answers: a large majority of the participants prefer the incorporation of technology in learning, primarily with their smartphones, and with the use of socialising applications as the most effective approach, followed by videos and TV subtitles. In this case the teacher plays a crucial role in selecting a suitable device and an appropriate social platform for learning. As regards the inclusive learning approaches, some participants have reported the use of 'sticky notes' as effective, for various reasons, as well as 'story books', but without mentioning any particular reasons. Regarding application use in the two stages of the study, 85% of the participants have chosen the socialising applications as the most effective applications for learning and have reported satisfaction from their use, together with L1 translation and daily revision of the target words. Moreover, none of the participants reported any charges or costs related to the use of socialising applications, or any major problems encountered during the learning and have overall enjoyed the social aspect of language learning. Last but not least, the participants would definitely recommend learning with similar applications and a similar approach in the future, to their friends or other learners.

We will now refer to the findings obtained from the diaries (Figure 4.8), which students had maintained for the entire duration of the study, and reported their experiences of learning as well as how they fitted the use of technology into their existing daily routines.

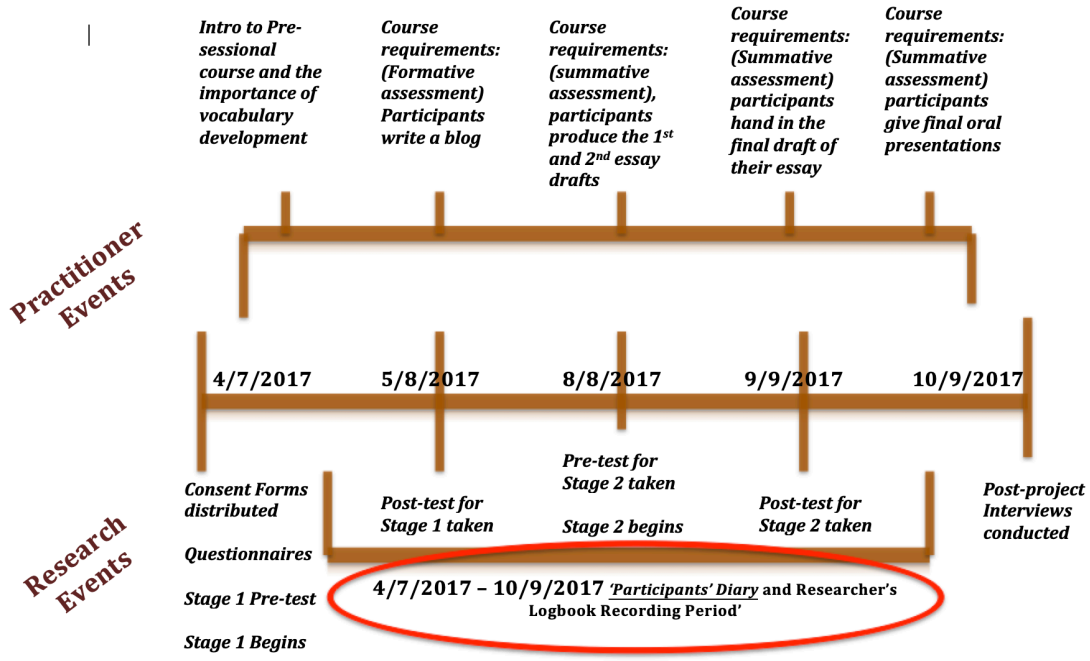


Figure 4.8 A longitudinal research event (participants' diary recording)

4.4. Diaries

The participants in the present study were instructed to input daily experiences concerning their learning, in their diaries. The written input was not only based on their attitude towards learning with a certain application, but also the pace at which they were learning, the quantity of daily learning and whether the entire process met their learning needs, to be commented on and recorded in the diaries (Figure 4.8). The diaries, however, did not solely represent the learning experiences of the participants, but the researcher was also required to maintain a logbook with daily input, that would corroborate the diary notes. The term 'diary' did not represent a typical diary or notebook, rather the participants were provided with printed hand-outs consisting of tables and cells for each day to record their notes in (see Appendix 14). Contrary to the researcher's expectations, not all participants tried to complete their diaries.

Moreover, the input regarding their daily experiences was quite limited, and instead of daily, notes on a weekly or bi-weekly basis were submitted. Despite obtaining limited entries, participants provided valuable feedback on the following three main themes (that also align with the themes presented in the interview section) in relation to their vocabulary acquisition:

1. Their perceptions of traditional approaches
2. Social aspects of language learning: Learning experiences and perceptions of the applications incorporated during Stage 1, and Stage 2 of the study
3. The adoption of an inclusive learning approach: Perceptions of personal practices based on combining both traditional and technological approaches for vocabulary acquisition

The data from participants' diaries in relation to each one of the above three themes is presented through tables, where an overview of the theme and supporting quotes are displayed.

4.4.1. Perceptions of traditional approaches

The first theme, related to incorporating traditional approaches in vocabulary acquisition, shows in Table 4.13 that the majority of quotes and comments are in favour of physical attachment and physically feeling the learning materials when learning through traditional approaches. Regardless of smartphone popularity, sticky notes and storybooks are still popular by foreign language learners. The sticky notes according to the participants are helpful for enabling the learners to write the word and provide the opportunity to learn actively, rather than reading alone and trying to learn passively. Moreover, learners from the developing countries lack the experience and competence in learning with modern technology such as smartphones and applications, and have usually been brought up with more structural and conventional learning approaches. In addition, students from such countries and those similar to some of the participants in the present study, such as Libya and some parts of China, are often faced with economic and financial hardships and they are mainly sponsored to study in Britain, instead of self-financing. Such students usually opt for traditional approaches and lack the experience of learning with advanced technological devices (Table 4.13).

It is therefore less likely for some learners to afford expensive and latest smartphones and benefit from the advanced features associated with modern learning. As a result, learners use poor quality devices and subsequently report problems associated with them such as 'device screen jams and freezes'. In addition, the technological and functional flaws of the smartphones have also encouraged the participants to resort to traditional approaches, which most of the participants have been brought up with and which makes them feel comfortable when using their preferred approaches, as confirmed by participants in Table 4.13.

Perceptions of traditional approaches	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
Physical attachment with learning **Overview:** This category has also been briefly described in the data presentation part of the 'Interviews'. The bond and attachment with hardcopies of learning materials and resources is preferred by the majority of the learners. In this case, the participants have not only preserved the norm and a traditional learning approach, but have also supported the idea of being in charge of their own learning by producing hand-written notes contrary to a digital text, which is mostly predictive and which does not provide much spelling practice. Similarly, when it comes to hand-written notes, participants also feel more engaged and believe that for being an active producer of language, there are higher chances of retention. Hand-written notes may also prove more dedication towards language practice as well as improved spelling skills.	*"My bedroom is full of sticky notes even they keep falling down from the wall", "I liked one special story and I hope I can remember the words for longer because I will remember the story for longer"* Participant number 2 (average performance in Stage 2, below average performance in Stage 1) *"I like writing in English and doing hand-writing, even if my phone has text- writing tool, because"* Participant number 9 (outstanding performance in Stage 2 and below average performance in Stage 1) *"I like my handwriting. But I also take a photo of my notes and handwriting, then save on my phone to look at it later when I leave the note at home", "I am writing Sticky notes with new words and it is also helping me because when I write the new words on the notes, I can also practice my spelling"* Participant number 1 (average performance in Stage 2, zero in Stage 1) *"I have some sticky notes in the bathroom mirror and look at it when I brush my teeth"* Participant number 14 (below average performance in Stage 1 and average in Stage 2) *"I like using different colours of notes, for example yellow for nouns, blue for verbs and so on", "Sticky notes also help my roommate to learn, not just me, but my phone and the phone screen just help me to learn"* Participant number 9 (outstanding performance in Stage 2 and below average performance in Stage 1)

Perceptions of traditional approaches	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
	"I still write notes and use sticky notes because my mobile screen makes me see and remember and picturize only one word later on but my notebook can display and offer many notes at the same time and on the same page" Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1) *"I combine subtitles and sticky notes, hear them on TV, write them on notes and stick them on wall and look at them again and again"* Participant number 18 (above average performance in Stage 2, below average performance in Stage 1) *"Today I read a book and all new words I stick to the pictures in the story in my head"* Participant number 10 (outstanding performance in Stage 2 and below average performance in Stage 1)
Previous learning experience **Overview:** As discussed in the data presentation part of the interviews, not only are most learners and current participants brought up with traditional approaches, but also learners feel more responsible for their learning when attached less to the use of technology. For example, having their own materials to carry and take with them may result in more autonomous learning, than relying on the instructor and waiting to receive digital contents prepared by the instructor.	*"I like technology but I learned traditional way when I was a child", "I have an old phone and I cannot download apps, so teacher should give me the list of all vocabularies so I can learn"* Participant number 19 (below average performance in Stage 2 and zero in Stage 1)
Existence of technological problems **Overview:** Once again, the data presentation part of the interviews also discussed this issue and, according to the diary notes, participants feel that the time spent and allocated to dealing with the technical and functional issues may well be invested in additional learning from non-digital materials. Moreover, the lack of reliability in the digital devices usually results in learners not willing to take the risk and have	*"My phone is jammed and frozen and it is old, so sometimes learning is difficult"* Participant number 7 (average performance in both stages) *"Today I lost my phone and lost all messages and data….i didn't have saved copy. This make me very sad"* Participant number 9 (outstanding performance in Stage 2 and below average performance in Stage 1)

Perceptions of traditional approaches	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
their learning portfolio submitted to a platform, where it can be lost and not possibly recovered.	*"I love the photos and images but my phone memory is not big, so I delete them after I receive them because they take space of my memory"* Participant number 7 (average performance in both stages) *"I don't like the ting ting sound 12 times which is for the words and their pronunciation, so I turn my phone mute"* Participant number 3 (below average performance in Stage 1 and zero in Stage 2) *"I updated my Viber and lost all my messages and the photos….Wish I used Facebook Messenger", "Telegram is very slow for sending messages", "Sometimes you cannot send a video on these groups, because the size is big", "I change my number and WhatsApp added my new number, but all old messages are gone now"* Participant number 4 (average performance in Stage 2, below average performance in Stage 1)

Table 4.13 Participants' opinion about using traditional approaches

4.4.2. Social aspects of language learning: Learning experiences and perceptions of the applications incorporated during Stage 1 and Stage 2 of the study

The two categories (Stage 1 and Stage 2) of Table 4.14 and Table 4.15 report almost equal degrees of feedback in terms of the positive aspects of the different learning stages incorporated in the study. The category with the majority of positive quotes is based on positive attitudes towards Stage 2 socialising applications (see Table 4.14 and Table 4.15). Their 'fun' and interesting image incorporation, learning in groups and being connected to other classmates and friends as well as the existence of a teacher in the group, are reported as the most liked aspects. The negative aspects, however, include lack of smartphone storage and memory mainly and sometimes not being able to retrieve previously sent messages that contain target words and images. With regard to Stage 1 learning, the positive notes are based on ease of access, portability, and availability anytime, anywhere. The less positive notes on

the other hand report lack of motivation, poor application quality, lack of attention paid to the selection of contents, and the subject knowledge of the application developer.

Learning experiences and perceptions of the applications incorporated during Stage 1	
Categories (Stage 1)	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
Ease of portability and accessibility: **Overview:** Continuing from the data presentation section in the interviews, the availability of learning materials at learners' own convenience is the most commonly reported positive aspect of digital learning. This also allows the learners to reproduce several copies and easily distribute them via other means of communication.	*"I liked that my phone is with me everywhere I go and I can carry the word in the phone everywhere I go", "Now I have my own dictionaries in my phone, so I don't have to go to book shops to buy or carry with me paper dictionaries", "When I am waiting for my friend in station, I can open a package and learn new words"* Participant number 5 (above average performance in Stage 2, zero in Stage 1)
Learning with apps is popular **Overview:** As mentioned previously, learning with applications and smartphones is not only popular and a modern approach but the users/learners are also usually encouraged to learn with applications through advertisements, in-school or teacher recommendations as well as other sources such as YouTubers and Vloggers.	*"Some words I learn in app, I hear them in my class or read in my book in my class"* Participant number 2 (average performance in Stage 2, below average performance in Stage 1) *"This app help me find more good apps in market in my phone"* Participant number 1 (average performance in Stage 2, zero in Stage 1) *"Not all words in English can be translated into my first language, so I sometimes use English to English translation"* Participant number 10 (outstanding performance in Stage 2 and below average performance in Stage 1)
Selection of contents (words) **Overview:** Learning applications come in different forms and versions and are developed by different institutes or individuals. The important aspect of an application is not only its popularity, the number of downloads or stars given by the reviewers, but it is equally important to have accurate contents and have received positive reviews by the users. Learners rely on these applications for their learning and invest time, effort and sometimes money in learning with apps. It is therefore important that the developer of the application has a sound knowledge of the English language	*"The installed app has words that I don't need to learn, such as 'cart', 'allot' and 'dingy'. I want to learn something about my study and help me in the future"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1) *"The installed app has spelling mistakes !!!! Lession instead of lesson", "Lol, who doesn't know what a cat is??"* Participant number 6 (outstanding performance in Stage 2 and zero in Stage 1) *"Package one has some very easy and some very difficult words….made me confuse about my language level…..one lessons is teaching me the meaning of 'cat' and the other lesson is teaching me what 'exaggerate' means, come on"*, Participant number 6 (outstanding performance in Stage 2 and zero in Stage 1) *"I think the person who made the AWL app doesn't speak good English*

Learning experiences and perceptions of the applications incorporated during Stage 1	
Categories (Stage 1)	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
and assists learners in appropriate learning.	*too"* Participant number 6 (outstanding performance in Stage 2 and zero in Stage 1) *"Some meaning are more difficult than the words"* Participant number 7 (average performance in both stages)

Table 4.14 Participants' feedback on using the technological approaches (Stage 1)

Learning experiences and perceptions of the applications incorporated during Stage 2	
Categories (Stage 2)	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
A new learning experience making learning easier **Overview:** Vocabulary acquisition with smartphones is not new and has attracted the attention of numerous researchers and educators. However, the incorporation of smartphone applications, that are not used for educational purposes but mainly for socialising may be unprecedented. According to the feedback from the participants in the present study, the approach was new and interesting to all of them, and their feedback has been mostly positive. The most interesting feature for the participants has not only been the 'learning while socialising' but the added features such as images, audio clips and the platform through which the learning took place.	*"Some pictures remind me of my friends and this makes the learning fast"* Participant number 7 (average performance in both stages) *"My friend who receives forwarded words from me also enjoys the learning, and I think she also forwards them to her friends"* Participant number 9 (outstanding performance in Stage 2 and below average performance in Stage 1) *"Today I showed the words to my other friends and they wished they were in the group as well"* Participant number 6 (outstanding performance in Stage 2 and zero in Stage 1) *"If my phone is low in memory or storage, Facebook messenger, helps me save copy of the words and pictures and I can log in from my laptop to see them", "Socializing apps are popular now with learning, even more popular, I am enjoying my Viber class", "Some students are exiting and leaving the groups where they can learn, I think they are idiots, free learning doesn't happen these days, but they are too lazy to benefit from it", "If I become a teacher one day In sha Allah, I will do the same, send to my students their homework and practice on WhatsApp or Telegram"* Participant number 6 (outstanding performance in Stage 2 and zero in Stage 1) *"I am now forwarding the messages to my friend because she also wants to learn new words"* Participant number 9 (outstanding performance in

Learning experiences and perceptions of the applications incorporated during Stage 2	
Categories (Stage 2)	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
	Stage 2 and below average performance in Stage 1) *"My teacher is so good and her messages are beautiful and fun like her", "I copy my teacher now. I search for a photo about the new word, when I find it, I save it on my phone and look at it again and again to refresh my memory of the new word"* Participant number 16 (below average performance in Stage 2 and zero in Stage 1) *"You can easily take photo about the words , more photo like what you think and send to the group with this app"* Participant number 12 (above average performance in Stage 2, below average performance in Stage 1)
The approach is in favour of visual learning **Overview:** To the majority of the participants, the socialising applications have proven to be more effective and interesting when compared to the installed applications. One of the main reasons was the incorporation of visual illustration of the definitions. Images have been more appealing and have helped the participants retain the new vocabulary items for longer while providing a condensed and simplified definition. It is a common phenomenon that people and faces are remembered for longer than their names. So, if the learner is unable to recall the word but remembers the images, it will be possible to read the word and understand the meaning through remembering the image.	*"I like the pictures…I save the picture in my mind first, then save the name or meaning of the picture and this helps remember the word", "The pictures made the learning very interesting, they always make me laugh"* Participant number 9 (outstanding performance in Stage 2 and below average performance in Stage 1) *"I am using Facebook messenger on phone and iPad, so I have the chance to look at the new words two times everyday"* Participant number 12 (above average performance in Stage 2, below average performance in Stage 1) *"I always wait for the new picture to see. They are funny and I like them"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1) *"I am now very happy with Socializing apps, because the apps not only teach us new words but also how to say the new words and what they look like in pictures"* Participant number 10 (outstanding performance in Stage 2 and below average performance in Stage 1)
Interesting to learn in groups with friends while socialising **Overview:** Collaborative learning as mentioned previously has played a major role in assisting the participants learn a few extra words in contrast to isolated learning from the	*"I love learning in my socialising app, makes me closer to my friends and improve my language"* Participant number 20 (average performance in Stage 2, zero in Stage 1) *"Alhamdulelah I'm not learning alone anymore, I'm learning with friends and classmates in a group and we also have our lovely teacher in*

Learning experiences and perceptions of the applications incorporated during Stage 2	
Categories (Stage 2)	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
installed application. Participants felt more engaged and motivated during the Stage 2 learning. They reported additional input from friends and other group members that not only enhanced learning but also resulted in using new strategies and techniques. Furthermore, participants also expressed satisfaction for the regular intervals at which they received the words and the fact that the instructor was still available for assistance or clarification.	*the group"* Participant number 11 (below average performance in Stage 1 and average in Stage 2) *"When we have break and we sit together, we talk about words and their pictures and find same meaning in Arabic"* Participant number 6 (outstanding performance in Stage 2 and zero in Stage 1) *"I like the Socializing apps because the installed apps don't put you in the mood for learning. You kind of avoid learning and cannot go back to it to open the app and "learn". But with socializing apps, whether you are in a mood or not, you somehow open messages, read and try to learn, to show other group members that you are online"* Participant number 5 (above average performance in Stage 2, zero in Stage 1) *"Socializing apps, make me connected to my teacher and because I like my teacher, learning is easier for me and I like learning too"* Participant number 2 (average performance in Stage 2, below average performance in Stage 1) *"I use new word in a sentence and send sentence to my friends in our WhatsApp group and make fun and then I don't forget the new word", "I like my WhatsApp because I am always online in the app", "I like my smartphone and the app where I can show everyone my profile photo"* Participant number 8 (above average performance in Stage 2, below average performance in Stage 1)
The apps are easy and safe to use **Overview:** The number of socialising applications is undoubtedly on the rise and more advanced features are added to the apps on a regular basis. One of the most important features is the safety and privacy of the users. In the present study, the majority of the participants felt safe and satisfied with the use of the socialising applications. The only rare case was when the female participants did not feel comfortable in the same group where male participants were added and requested a gender-segregated group.	*"I sent a wrong message to the group which I wanted to send to my friend, it was accident, but lucky I deleted it, because you can delete your sent message on Viber"* Participant number 1 (average performance in Stage 2, zero in Stage 1) *"In Telegram you cannot see other people phone number, it is good because some students I know them"* Participant number 11 (below average performance in Stage 1 and average in Stage 2)
Lack of technological infrastructure	*"In my country, they blocked Viber but not WhatsApp, so I am in*

Learning experiences and perceptions of the applications incorporated during Stage 2	
Categories (Stage 2)	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
Overview: While for some learners it was the lack of technological infrastructure in their home countries, for others it was the scarcity of smartphones due to financial hardships. It has also been the case where one type of application is allowed in one country but the other type of application is barred, for example the bar on Viber in Saudi Arabia and on Facebook in China. It was therefore necessary to include more than one type of application which could enable the learners to choose the app which they felt comfortable and familiar with.	*WhatsApp group"* Participant number 3 (below average performance in Stage 1 and zero in Stage 2)

Table 4.15 Participants' feedback on using the technological approaches (Stage 2)

4.4.3. The adoption of an inclusive approach to language learning: Perceptions of personal practices based on combining both traditional and technological approaches for vocabulary acquisition

Regarding the second most positively perceived approach for developing their vocabulary knowledge, the participants perceived individual learning approaches to be useful and effective. As can be seen in Table 4.16, not only have the positive aspects of the two types of applications helped participants learn more words, but their individual learning approaches have also been considered effective. Their opinion about their own preferred learning approach is as positive and worth considering as their opinion about any modern, popular and world-renowned approach. They rely on their first language translation and continue to use bilingual dictionaries. Mnemonic and auditory learning approaches may be unique to individual learners, which might not be perceived effective by other learners. Indeed, other learners might have other unique and preferred learning approaches that are not mentioned in the present study. To conclude, there are positive and less positive aspects to every category and none of the approaches have been perceived as the ultimate answer for the development of vocabulary items outside the classroom.

Perceptions of personal practices based on combining both traditional and technological approaches for vocabulary acquisition	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
Mnemonics **Overview:** One of the most prominent individual learning approaches could be the use of mnemonics. The participants in the present study managed to make good use of the techniques by relating the target words to the people they know, in order to remember the meaning for longer. The connection made between the word and other items or people not only made the learning fun, but it also simplified the learning. The technique is unique to every individual learner and may not be recommended by the instructor, how and when to be applied. As can be seen in the supporting quotes, friends were known to the learners alone and the participants had made good use of this technique.	*"Two days ago, I matched the word stubborn to my friend. Today I saw my friend and remembered the word stubborn", "I like relating the new words to my friends. Today I matched the word 'Frugal' to my friend and I sent him a message that he is so frugal that he goes to bed hungry"* Participant number 7 (average performance in both stages) *"I put all new words in sentences and make sentences about my friends and examples of what they are"* Participant number 17 (below average performance in both stages)
L1 Translation **Overview:** In addition to the overview stated in the data presentation of the interview section, L1 translation is not only the primary foreign language learning approach for the majority of the learners, but it is also the simplest and the option that is almost always available. The majority of the participants in the present study also opted for the L1 translation, despite the English translation being available to them in both stages. They believed that the definitions of the new words usually led them to confusion as there are words in the definition that are new and as a result require further definition searches.	*"English word with English meaning is difficult for me", "In my school, in my country we always used words in English and meaning in my first language, but here in the classroom, no English and Arabic dictionary available, so I go on Google", "I always translate the meaning, Because it makes sense more when I know the word in my language"* Participant number 18 (above average performance in Stage 2, below average performance in Stage 1) *"I don't like English/English dictionaries, because searching for meaning means search for meaning of meaning, because sometimes the meaning is not easy to understand"* Participant number 15 (below average performance in both stages) *"I wish I had Arabic translation of the words too"* Participant number 6 (outstanding performance in Stage 2 and zero in Stage 1)
Auditory Learning: **Overview:** To elaborate further on what has	*"I record my voice, read sentences and listen to it later"* Participant number 13 (outstanding performance in Stage 2 and

Perceptions of personal practices based on combining both traditional and technological approaches for vocabulary acquisition	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
already been stated about auditory learning in the data presentation of the interview section, learning through listening may be one of the most convenient learning options, since it only requires a set of headphones, which the majority carry with them all the time. However, the question for some researchers and educators is whether auditory learning is effective as much as it is convenient.	below average performance in Stage 1) *"I listen to my recorded voice which has the new words before I go to sleep, because I cannot sleep easily, but sometimes when I wake up in the morning, I forget the words, so I play again when I have my breakfast"* Participant number 9 (outstanding performance in Stage 2 and below average performance in Stage 1)
Immersion **Overview:** While immersion is quite important in developing second language learners' language and assists them in autonomous and spontaneous learning, the opportunity is not always provided and the majority of the learners end up living with housemates from home countries. As a result, the language knowledge remains at the same stage and the expected progress in the target language country is not usually made.	*"Sometimes I wish I lived with a host family who speaks English all the time and not share house with my Arabic friends, maybe my language will be better very soon and can learn local language too"* Participant number 5 (above average performance in Stage 2, zero in Stage 1)
Learn while teaching **Overview:** The Stage 2 socialising applications did not only provide the language practice to the participants in the groups created by the researcher, but the participants subsequently forwarded the instructions to their friends who had not been added to the groups to benefit from the contents. As a result, the participants not only received the target words but also managed to revise successfully by teaching others, automatically believing in having mastered the words and forwarding the sent messages provided by the researcher.	*"I make a sentence and message it to my friend, then he asks about the meaning and I explain. It helps him learn and helps me practice"* Participant number 12 (above average performance in Stage 2, below average performance in Stage 1) *"I most of the time teach the new words that I learn to my friend, because when you become a teacher then you shouldn't forget the word"* Participant number 10 (outstanding performance in Stage 2 and below average performance in Stage 1)
Ease of use **Overview:** The ease of use in this part of the findings does not specifically apply to smartphones and technology, as mentioned earlier, but the convenience of learning with	*"It's much easier to find the meaning in Google translator compared to paper dictionary, turning pages"* *Participant number 18 (above average performance in Stage 2, below average performance in Stage 1)*

Perceptions of personal practices based on combining both traditional and technological approaches for vocabulary acquisition	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
Google translator. Participants' perception of Google translator is mostly positive for its ease of use and swift response. Google translator includes the majority of the world's languages and most of the time the translation is reasonably accurate as well, but some users may still have a sceptical view of the application. Nonetheless, the application is being constantly updated and improved and has many happy users including the participants in the present study.	*"I like finding my first language in Google translator. I use it a lot not only for words but for phrases and sentences too"* Participant number 15 (below average performance in both stages)
The joy of trying a new approach to learn with visual stimuli **Overview:** As can be seen, the majority of the quotes are in favour of visual learning in general and movies specifically. The good news is that movies are not only watched for entertainment, but the participants have also incorporated them for language learning, by activating the subtitles and annotations. To the majority of the participants, the subtitles have helped them learn and improve pronunciation, learn different accents and most importantly learn new words in context.	*"I watch a lot of TV and movies with subtitles on where every time I read and see the new words repeated in action", "Subtitles are good. With Subtitles, I am learning the new word in action, instead of searching for the meaning in a dictionary and still not sure what it looks like in action", "With subtitles I learned to say the word in American accent, because I like American accent, I can copy it from actors"* Participant number 18 (above average performance in Stage 2, below average performance in Stage 1) *"When I watch movies and learn new words, the actors are telling me the example for the new words, not in paper or dictionary, that is good"* Participant number 15 (below average performance in both stages) *"I watch my favourite movie two times, because first time I didn't see the faces because I was reading the subtitles, second and third time, I learned the words and watched the movie again, not looking at subtitles, wow it feels like I speak their language completely",* Participant number 5 (above average performance in Stage 2, zero in Stage 1)
Other individual approaches **Overview:** As mentioned previously, individual learning approaches can be unique to the learners and created by themselves without any recommendation from an instructor. Besides regular interaction with a	*"Today I am watching a movie and have the subtitles on. It is helping me learn new words, even words which were sent by the teacher, for example 'prediction'. I copy the words in my phone's Notes folder and look at it again later"* Participant number 9 (outstanding performance in Stage 2 and below average performance in Stage 1)

Perceptions of personal practices based on combining both traditional and technological approaches for vocabulary acquisition	
Categories	**Supporting quotes from participants + details and progress record of participants *(Colour-coding according to Table 4.1)***
native speaker or more competent speakers, reading subtitles, and making their own sentences, the participants also mentioned other personal practices such as singing, saving images on handsets and displaying their verbosity for longer retention, so that they are able to relate to the majority of the speakers in the target language, be part of the spoken community, integrate and feel accepted in the wider community.	*"I want to learn the language for my teacher, I love her and want to learn her language and make her impress"* Participant number 16 (below average performance in Stage 2 and zero in Stage 1) *"I like singing, so I make songs from new words and sing them with meaning", "When I learn new words, I use it in sentences many times to make sure I don't forget"* Participant number 19 (below average performance in Stage 2 and zero in Stage 1) *"I like showing off with my new words and using it when talking to my friends"* Participant number 14 (below average performance in Stage 1 and average in Stage 2) *"Today I saved one photo as my mobile wallpaper to practice the meaning every time I look at my phone screen. Now I will never forget this word"* Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1)

Table 4.16 Learners' feedback on using other approaches (personal practices)

In addition to Table 4.16, we can clearly see that there is usually a unique learner who, contrary to expectations, is a traditional, 'non-tech-savvy student' who uses a smartphone but does not usually use the advanced features for the tasks that he does manually, such as doodling, note-taking, drawing arrows or taking screenshots. As can be seen in Appendix 14, participant number 13 stated the following on different occasions regarding his preference towards traditional approaches:

> *"I still write notes and use sticky notes because my mobile screen makes me remember and picture in my mind only one word later on whereas my notebook can show and let me see many words at the same time. Also in my note book I can learn better from the way I write and added my notes, made connections and drawing arrows from one word to another, whereas on the paper, I have them (top, bottom-left right corners) and/or make notes around*

other words all help me learn better and in my own way then I can take a photo of that particular page in my notebook have it with me in my phone and carry with me where-ever I go".

Participant number 13 (outstanding performance in Stage 2 and below average performance in Stage 1)

Similarly, one possible long-term retention solution or a strategy proven to be successful towards retaining new words for longer is recording in a student's own voice on smartphones. Having the words recorded in their own voices, such as all new vocabulary items plus their definitions, as well as examples and other possible meanings, derivatives and listening to it on the go, is what some of the participants have reported. As can be seen in notes from the students' diaries, participant number 9 has found voice-recording to be effective and helping him retain more words. Voice recording may appear in different forms, such as in your own voice, a voice recorded from another source or simply listening to an audio clip downloaded from the internet. Such a strategy suits auditory learning and needs to be encouraged and promoted with a variety of materials. According to participant number 9, listening to the recorded audio files of new vocabulary items before going to bed or while on the bed and before going to sleep, might not be as effective as it is upon waking up, because going to sleep may cause reduced retention, whereas if listening upon waking up (15 minutes) before getting up and leaving the bed, you are more likely to retain the new words throughout the day.

In terms of searching for and quickly accessing new vocabulary items, recorded audio files will probably be the least popular or useful approach, since the entire list of new words are saved as one audio-file and it is almost impossible to extract one particular vocabulary item from the rest of the words in an audio-recorded file. The entire audio file may need to be played from the start, while still being less possible to highlight the target word. However, with a written list of the new words, the target word could be circled, underlined or highlighted on both paper and the smartphone. Similarly, it is possible and easy to search for a particular word in WhatsApp, Viber, Telegram and Facebook Messenger, by typing the word in the 'search' box.

4.5. Data presentation from the researcher's logbook

Another data collection tool administered in the study was the researcher's own logbook, shown in Figure 4.9, while an example of the actual hand-written notes are displayed in Appendix 15. The data collected from the logbook aligns with most of the data obtained from participants' diaries and supports some responses to the interview questions. However, the findings in the logbook are mainly concerned with the social aspects of language learning and are categorised into two main themes only, as the researcher's observed notes had mostly been related to these themes:

1. Participants' perceptions of the Stage 2 socialising applications

2. Participants' perceptions of the Stage 1 installed application

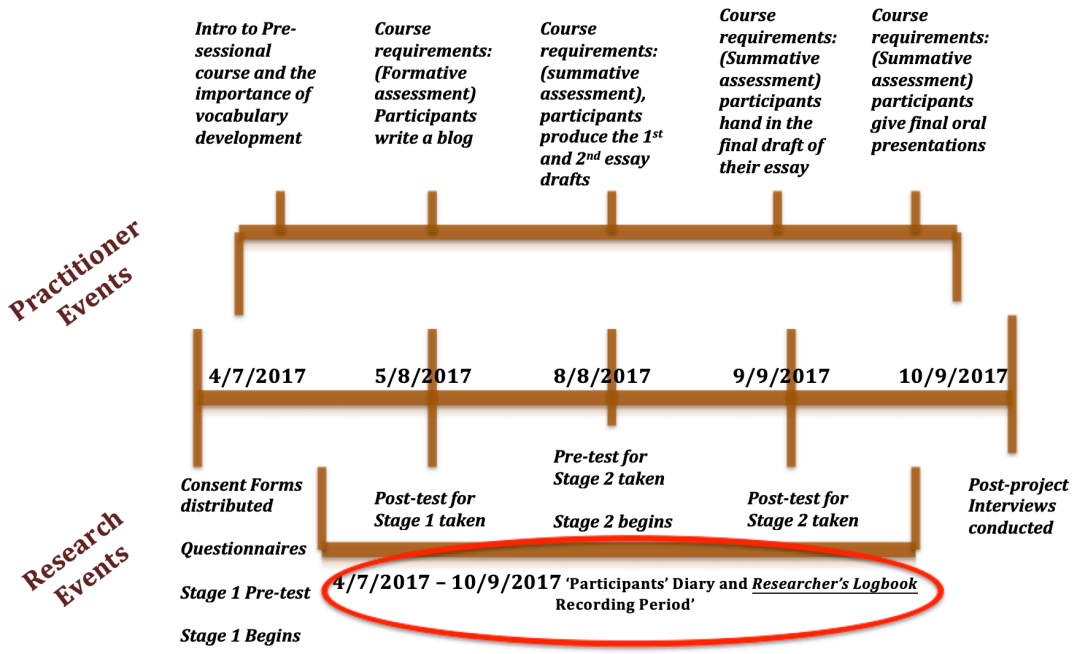


Figure 4.9. A longitudinal research event (researcher's logbook recording)

As can be seen, Table 4.17 below presents a handful of notes from the researcher's logbook that were recorded on a daily basis, throughout the study. Logbook entries not only reported the research events that had been documented on a particular date and time, but also incidents that had taken place in the classroom where the study had been conducted that had a direct

impact on the findings and analysis of the present study, and which are of pertinence to this chapter. As mentioned in section 4.4, the participants' notes in the diaries were to be supported and referred to the notes in the researcher's logbook. Table 4.17 will therefore report similarities and likenesses in terms of participants' perceptions of the two types of applications implemented in the present study. While the participants produced their own hand-written notes in the diaries, the researcher either heard a similar comment or feedback in the classroom, or observed an incident, which assimilated a written account of the participants' diaries.

Researcher's logbook recording		
Categories	**Stage 1 (Installed Application)**	**Stage 2 (Socialising Applications)**
Positive outcomes	Apps installed and learning begins with some participants	Using learnt words in the class with pride Matching images (sent on apps) with contexts used in the classroom (influence)
Enthusiasm and motivation to learn	Very limited and almost no verbal feedback that could be reported here.	Some participant requested to be added to more than one group in order to have several encounters to the new words Participant number 16 is learning to please the teacher Participant number 20 is always online, receives, reads and likes the messages Participant number 11 asked to increase the number of the daily words sent on apps Participant number 2 wished that Cambridge and Oxford dictionaries also had visual illustrations for all of the words The majority of the participants feel disappointed that the study has come to an end and they are no longer going to receive words, but immensely satisfied overall
Lack of enthusiasm	Not opening the app to learn	None

Researcher's logbook recording		
Categories	**Stage 1 (Installed Application)**	**Stage 2 (Socialising Applications)**
	Less happy friendly expressions The app is dull and boring Used an alternative app which was more interesting	
The app lacked positive aspects	Spelling mistakes Difficult or confusing definitions Words from easy and difficult level Randomly selected words, not all IELTS level Words in isolation not helping much, should be used in context or example sentences	Images and example sentences should have conveyed the same visual illustration
Other problems encountered	Lack of storage or smartphone memory App cannot be found on Apple Store (not suitable for Apple smartphone users)	Female participants exited the joint male/female groups and asked for a segregated group, as a result of which a separate Telegram group was created for them where they were able to freely exchange ideas and enjoy learning in a gender-segregated socialising group
Other Observations (both stages)	Negative attitude towards online learning (websites) and learning with games Participant (10) is memorising new words, their meanings and definitions in first language	

Table 4.17 Researcher's logbook entries

4.5.1. Participants' perceptions of the Stage 2 socialising applications

Table 4.17 reveals considerable difference in participants' attitudes towards the two learning stages. The responses are mostly indicative of being in favour of the socialising applications or the Stage 2 learning, to an extent that participants wanted to be added to more than one socialising group. Each socialising group (W, V, FM, T) delivered the same messages containing the same words. When asked why they preferred to be added to more than one socialising group, they responded that to receive the words four times on four different platforms means they would have multiple exposures to the target words. This would not only assist the learners in learning fast and being able to retain the words for longer, but also have the words saved in more than one application, in case one of the applications is uninstalled. As can be seen in Appendix 8, some names appear on more than one application. As a result, participants who chose to receive the words on more than one application performed better in their post-tests than participants who wished to remain in one group and one application only (mainly the female participants, who preferred one segregated female group which was Telegram).

While the majority of the participants showed a positive attitude towards the socialising applications, for their unique learning experience, collaboration, and most importantly, the visual illustration of the meaning or definition, they also expressed a wish that the pictures and written definitions conveyed the same message. Nevertheless, learning with the socialising applications was reported as a very pleasant experience for the majority and the fact that the research study had to come to an end after 10 weeks of research events was a disappointment to them.

4.5.2. Participants' perceptions of the Stage 1 installed application

By contrast, the Stage 1, or learning with the installed application, not only resulted in less positive attitudes, mainly in terms of motivation and enthusiasm towards learning, but also reported the application's flaws and lack of professional and academic aspects. For example, the spelling mistakes and complicated definitions as well as the random selection of the words, which claimed to be IELTS appropriate, presumably resulted in little or no interest in

learning. The above feedback is not only mentioned previously, when presenting data from interviews and diaries and further reiterated in the present section, but will be analysed and discussed further in the next chapter. In summary, while one type of application has been preferred over the other type by the participants, both types of applications have had their problematic and challenging aspects that are noted in Table 4.17, which confirms that there is no 'one-size-fits-all' approach.

4.6. Pre-test and post-test results from both stages

In chronological order of evidence gathering, one of the initial research events was the post-tests taken for Stage 1 (see Figure 4.10). As mentioned at the beginning of this chapter, the installed application was used during the first stage of the study (the first 5 weeks), when participants had to learn 200 new words, whereas the socialising applications were incorporated during the second stage of the study (the second 5 weeks) when participants had to learn another set of 200 words. The participants took pre-tests for the 400 target words before each learning stage or each application to find out their prior vocabulary level. The pre-test and post-test questions were the same before and after the study and there were two parts, each including 100 questions. However, the two parts in the tests were not in the same format; Part 1 included 100 questions in 'yes, no, not sure' format, while Part 2 contained 100 questions and in multiple-choice 'A, B, C' format. The primary reason for the selection of two different formats (in the two parts of the same test) was to encourage and generate more decisions about appropriate choice, instead of providing the participants with a forced choice where they must choose between two possible answers (yes/no) or go for the safest option (not sure). Participants scored higher in Part 2 'A, B, C', compared to part 1 'yes, no, not sure' format. One explanation could be that in Part 2 (A, B, C), the correct answer was available alongside the other two possible answers, whereas for Part 1 (yes, no, not sure), participants had to consider or guess, spend time and put efforts in, on whether the answer was correct or not. Had the entire test been based on format A, B, and C, the scores might have been higher, as learners would have been provided with the correct answer, alongside the other two possible answers. However, an unusual but interesting finding after comparing the pre- and post-tests results was that some participants scored higher in Part 1 of the pre-tests and lower in the post-tests, which it can be argued, should have been the opposite. This confirms that some participants may well have chosen the answers randomly without trying to

consider and identify the correct answer. Nevertheless, the contradictory outcomes were applicable to only two participants (participant numbers 1 and 2) and the rest of the participants scored better in the post-tests as expected.

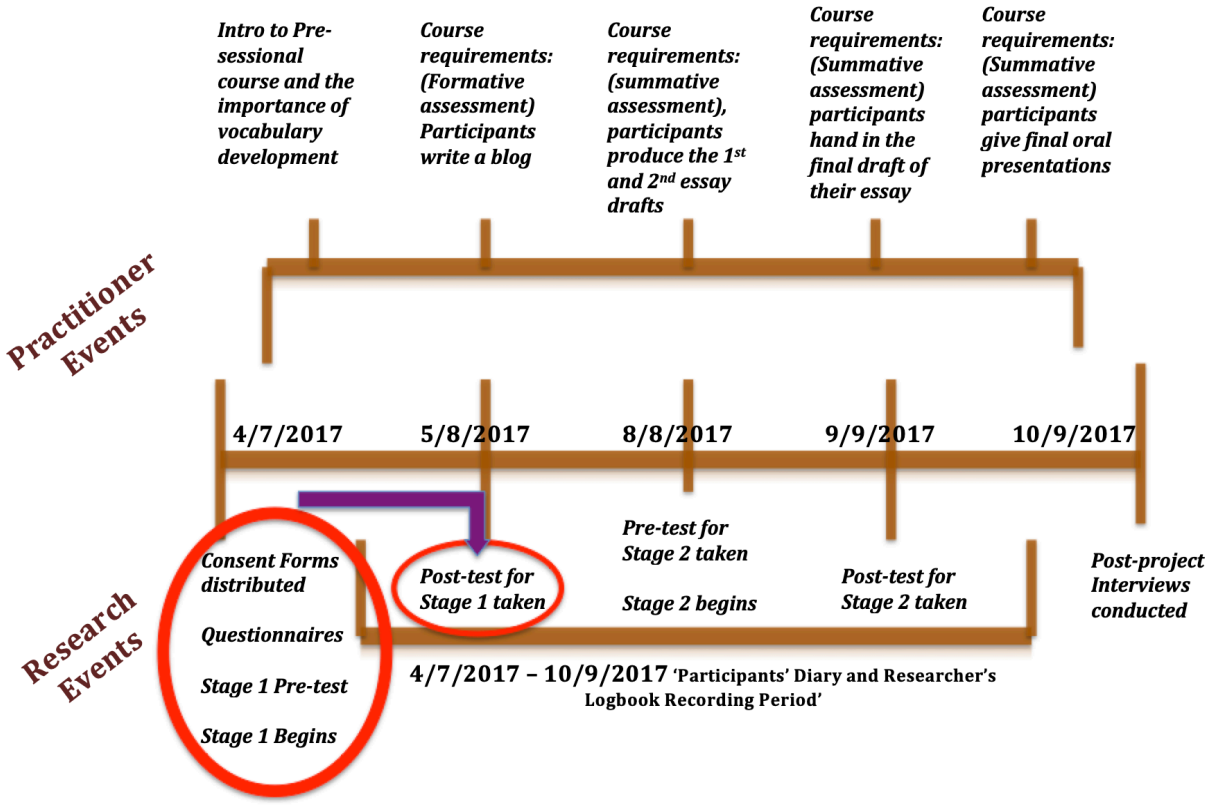


Figure 4.10 Timeline activity on 4/7/2017 and 5/8/2017

First, the results obtained from the pre- and post-tests of Stage 1 are presented in Figure 4.11 showing the knowledge of words before and after the installation of the IELTS AWL application, with the exact number of participants in each band.

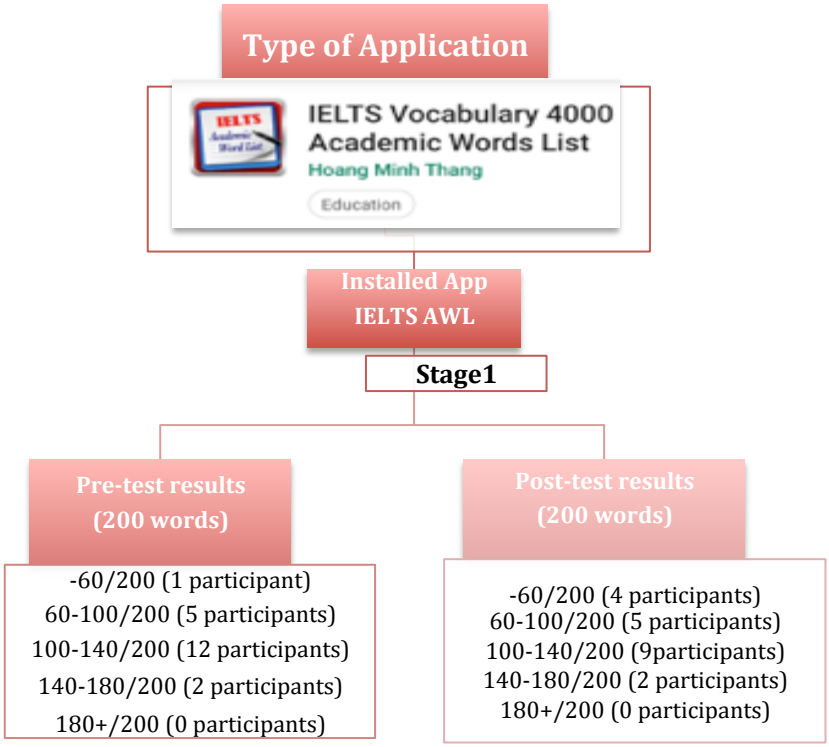


Figure 4.11 Knowledge of words before and after the study with Stage 1

In Figure 4.11, the majority of the participants indicated knowledge of 100-140 words out of 200 in the pre-test. This number was expected to increase in the post-test after learning more words from the installed application. On the contrary, the number seemed to drop. In other words, more participants scored lower in the post-tests and had obtained higher scores in the pre-tests, when it might be expected that they should have scored lower in the pre-tests and higher in the post-tests. The counterproductive results were analysed and are discussed later, and whether the outcomes were a result of randomly selecting the answers in one of the tests or as a result of forgetting the meaning of words in the post-tests. As far as the test results in Stage 2 are concerned, Figure 4.13 presents the pre-test and post-test results of the Stage 2 learning, which was the next research event, as displayed in Figure 4.12.

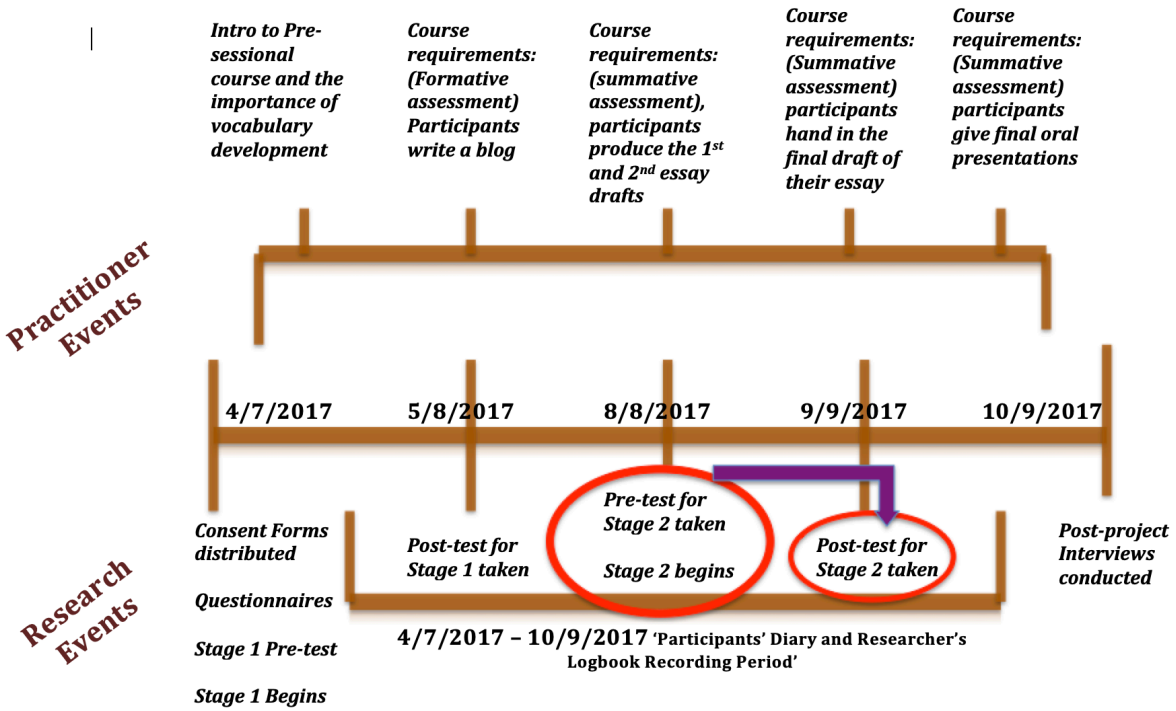


Figure 4.12 Research event on 8/8/2017 and 9/9/2017

In Figure 4.13, the pre-test reveals that the majority of the participants knew 60-100 out of 200 words. After receiving the words on their socialising applications for five weeks, the post-tests showed that only a few participants lacked improvement, while most of them succeeded in developing their word knowledge to a greater extent. For example, five out of 20 participants learned between 100 and 140 out of 200 words and three out of 20 participants learned more than 180 out of 200 new words. While only 4 out of 20 remained at the same level, the remaining eight participants managed to develop their vocabulary knowledge to an average extent and none of the participants scored below 60 out of 200 words. Having incorporated the two types of applications in the present study, the results in Figures 4.11 and 4.13 indicate that the socialising application as well as installed applications were both used by the participants to develop their academic vocabulary knowledge. According to Figure 4.11 and Figure 4.13, participants' performance in the pre-tests for both types of applications was below average, which indicated that most of the 400 words in both pre-tests were new to the students.

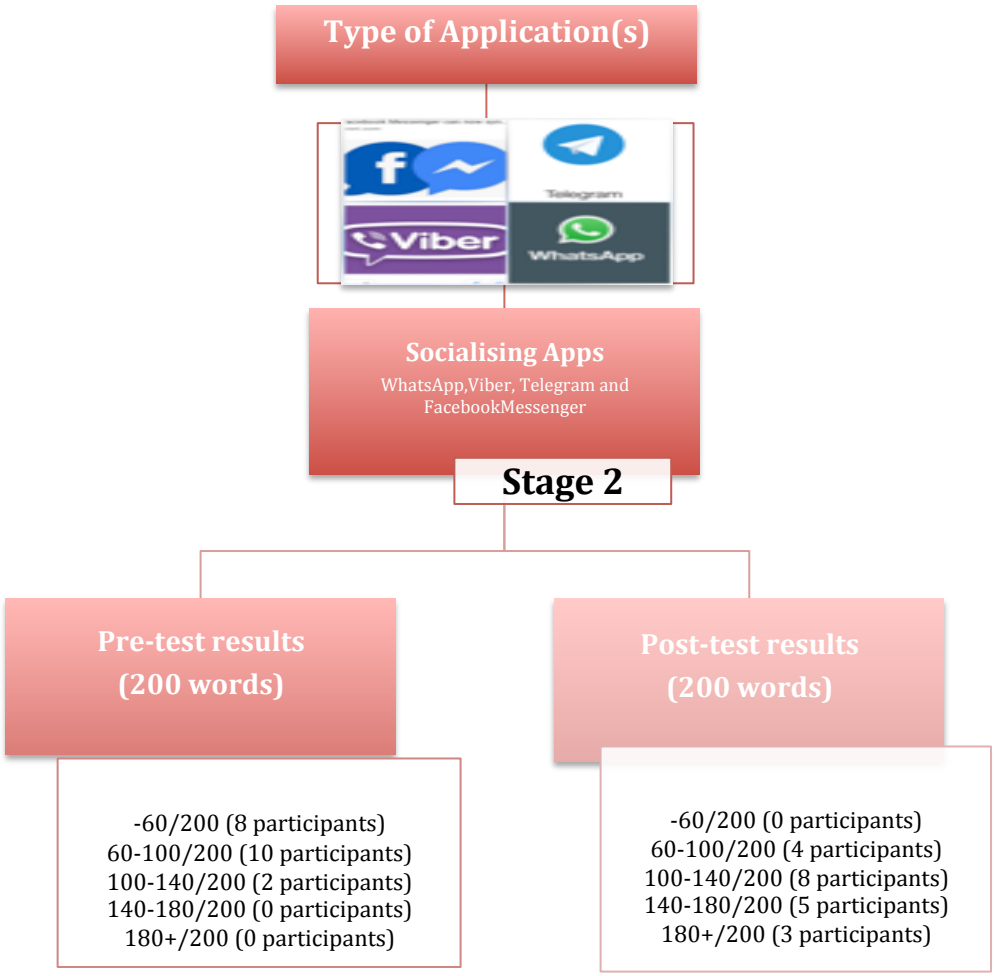


Figure 4.13 Knowledge of words before and after the study with Stage 2

This aligns with the previous statement about most international students with an IELTS 5.5 score having linguistic competence below the obtained score. A non-native English speaker student enrolling to study in a university in Britain with the aforementioned score should be able to understand the meaning of at least 150 out of the 200 words provided in the study (as the IELTS preparation courses and tests cover almost all of these words). But as shown above, the majority of them lacked the required word knowledge and hence the pre-sessional courses were arranged for them prior to commencing their degree courses. Likewise, there is little difference in the number of participants with an average performance in both Stage 1 and Stage 2 pre-tests. However, the results obtained from the post-tests in both stages revealed some considerable differences in outcomes. Participants achieved above average scores in the post-test for the Stage 2 learning. However, the results from the post-test for Stage 1 learning not only reported lack of initial understanding but also showed 5 participants with lower

scores for learning. The results in Figures 4.11 and 4.13, therefore, show that the incorporation of socialising applications has assisted the learners in learning more words, in comparison to the incorporation of the installed application. The reasons for such outcomes will be discussed in the next chapter.

As mentioned in section 4.1, at the beginning of the present chapter, Table 4.1 presented an overview of progress by participants in both stages which is summarised in Figure 4.14.

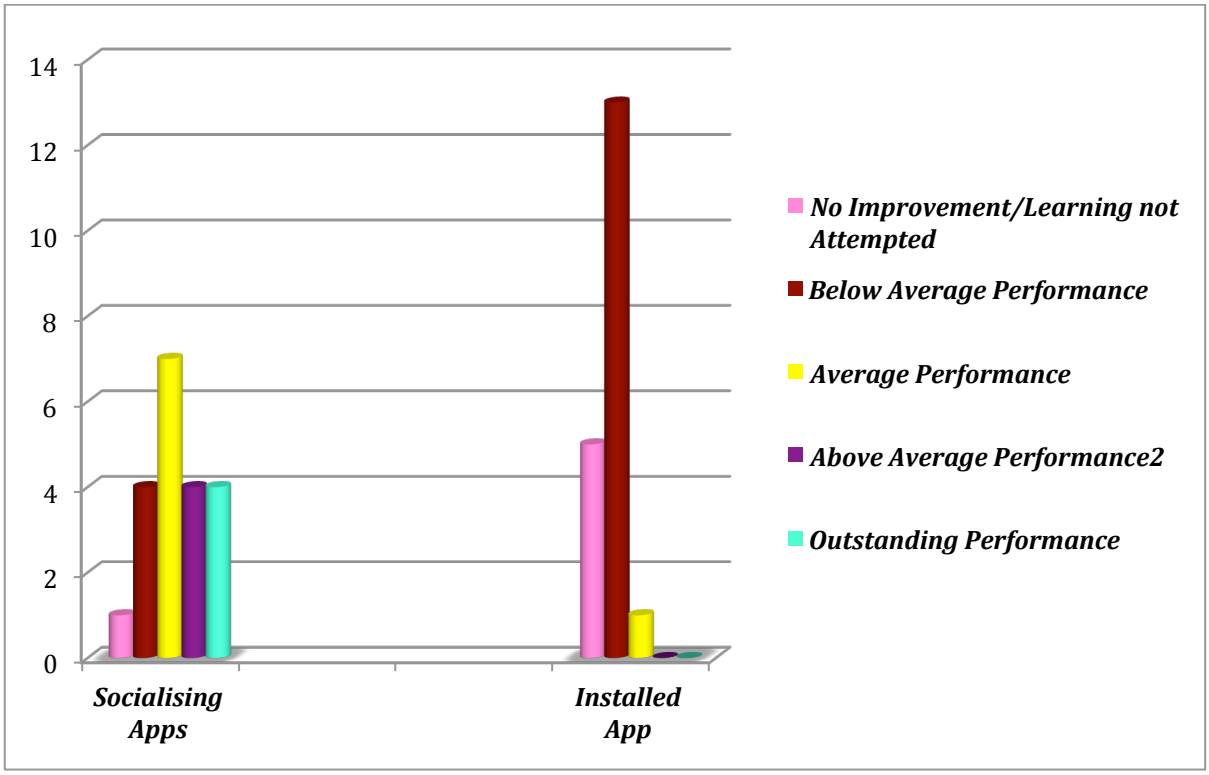


Figure 4.14 Summary of results from Table 4.1

The results in Table 4.1 and Figure 4.14 reveal a difference in the outcomes from the two types of applications incorporated in the present study. While the smartphones and the two different types of applications were used for vocabulary development, the participants enjoyed the use of their smartphones on a frequent basis, but, the idea of using it for learning was not easily accepted by some of the participants. As one participant stated during the interview (participant number 19), *"phones are for calling, chatting and socialising, not learning"*, it can be totally understood why for some learners, learning with smartphones, in contrast with the usual traditional approaches, is less successful. To sum up, the outcomes from the test results of the two stages are not only based on the learners' preferences for

traditional or technological approaches, but they are also based on other factors such as the type of application which they were using (installed app or socialising apps/boring or interesting), the contents of the applications used for learning (suitability of the chosen words according to the level and linguistic needs of the learners), the interaction between the learners (learning alone or collaboratively), the materials (general, academic or English for specific purposes words), and the facilitator (an unknown app developer or the learners' actual course instructor). Therefore, the post-test results support the quotes obtained from interviews, diaries and logbook regarding learners' preferences for incorporating the socialising applications for future learning too (based on the aforementioned qualities) and facilitated by the teacher, as well as their own personal practices that have resulted in such outcomes, therefore shaping the present study.

Chapter five: Analysis of the Findings – a Proposed Framework

5.1. Introduction

As indicated in the theoretical framework in the Methodology chapter, to reflect on how mobile language learning has developed over the past decade and to find out if any direction for the future has been suggested, Agnes Kukulska-Hulme's sequential order of development and advancement in the field summarises and predicts that:

- Learning with mobile telephones is no longer the ownership of technical experts and those who have specialist knowledge, but teachers and students have also begun to integrate mobile telephone technologies into everyday learning and teaching as well as inventing exciting and effective new scenarios of use (Kukulska-Hulme, 2006).
- Mobile devices have begun to support social contacts and learning through collaboration (Kukulska-Hulme & Shield, 2008).
- Learning with mobile telephones enables learners to locate and record noticed features 'on the spot' for subsequent development of their second language system (Kukulska-Hulme, 2009).
- In order to create the potential for significant change in teaching and learning practices, learners sometimes cross the border between formal and informal learning by engaging in activities that relate more closely to their current surroundings, particularly when they are not dependent on access to fixed computers (Kukulska-Hulme & Bull, 2009).
- In terms of portability, mobility and travel, learners and teachers are increasingly in a position to engage in activities that are motivated by their circumstances and needs, where there is "teacher-driven provision at one end" and "an entirely learner-driven provision at the other end" (Kukulska-Hulme, 2010).
- Learners are engaged in personally relevant learning where these emergent practices also point to productive ways of learning as far as the impact on higher education in the long term is concerned (Kukulska-Hulme & Beatriz, 2011).

- "Mobile Phones" have become learners' own personal assistants through which a rich variety of mobile language learning and rehearsal is taking place in informal settings (Kukulska-Hulme, 2016).

From the ownership and integration of mobile telephone technologies to recording, portability, learning productively and making the mobile telephones a 'personal assistant', Kukulska-Hulme's research indicates how the latest innovations in teaching and learning can be supported with the updated version of mobile telephones, that is, "Smartphones".

From the studies referred to in the literature review, a number of these suggest and indicate that educational researchers will always have the task of embracing new innovations and techniques for learning and teaching with technology. It can be claimed that since technology, and mobile telephones in particular, are in a constant state of development and updating and introduce their users to the latest advanced features, there will always be a gap in the literature of teaching and learning with mobile telephones. The gaps will be based on the unavailable (future) features of a mobile telephone at the time the research is being conducted. In other words, one reason that there is limited research conducted in the field of teaching and learning with smartphone applications is because smartphones and applications have only been available in the technological world for just over a decade or so. In future, a new application might be introduced or a new smartphone may emerge that could surprisingly speed up and enhance learning. A decade ago, it was probably difficult to believe that apps such as Viber, WhatsApp, Telegram and Facebook messenger would be introduced to smartphone users with video and image features available without additional mobile network carrier charges and informing the sender of the message not only of the message's delivery but whether the message has been "seen/read" or not. Educational researchers are therefore involved in adding new and updated studies conducted in the field of smartphones used for educational purposes and adding new topics that will open the door to another topic based on another new feature of this tool for future research.

5.2. Identification of a pedagogical framework based on data collected

The pedagogical framework for mobile assisted language teaching and learning introduced by Kukulska-Hulme (2015) indicates that activity types in language teaching and learning exploit certain technological aspects that are subsequently linked to other concepts that might be

considered crucial for activity use. Kukulska-Hulme further argues that the framework has a greater applicability in understanding and studying activity related to mobile use, particularly in teaching and learning. In this part of the analysis, Kukulska-Hulme's (2015) framework is provided as the structure of activity use in mobile assisted language teaching and learning that has also been described in chapter 3 of the present study. Henceforth, the data elements collected in the present study have been linked to the most related concepts of the pedagogical framework, as shown in Figure 5.1 (also displayed in Figure 3.3, page 89 of Chapter 3).

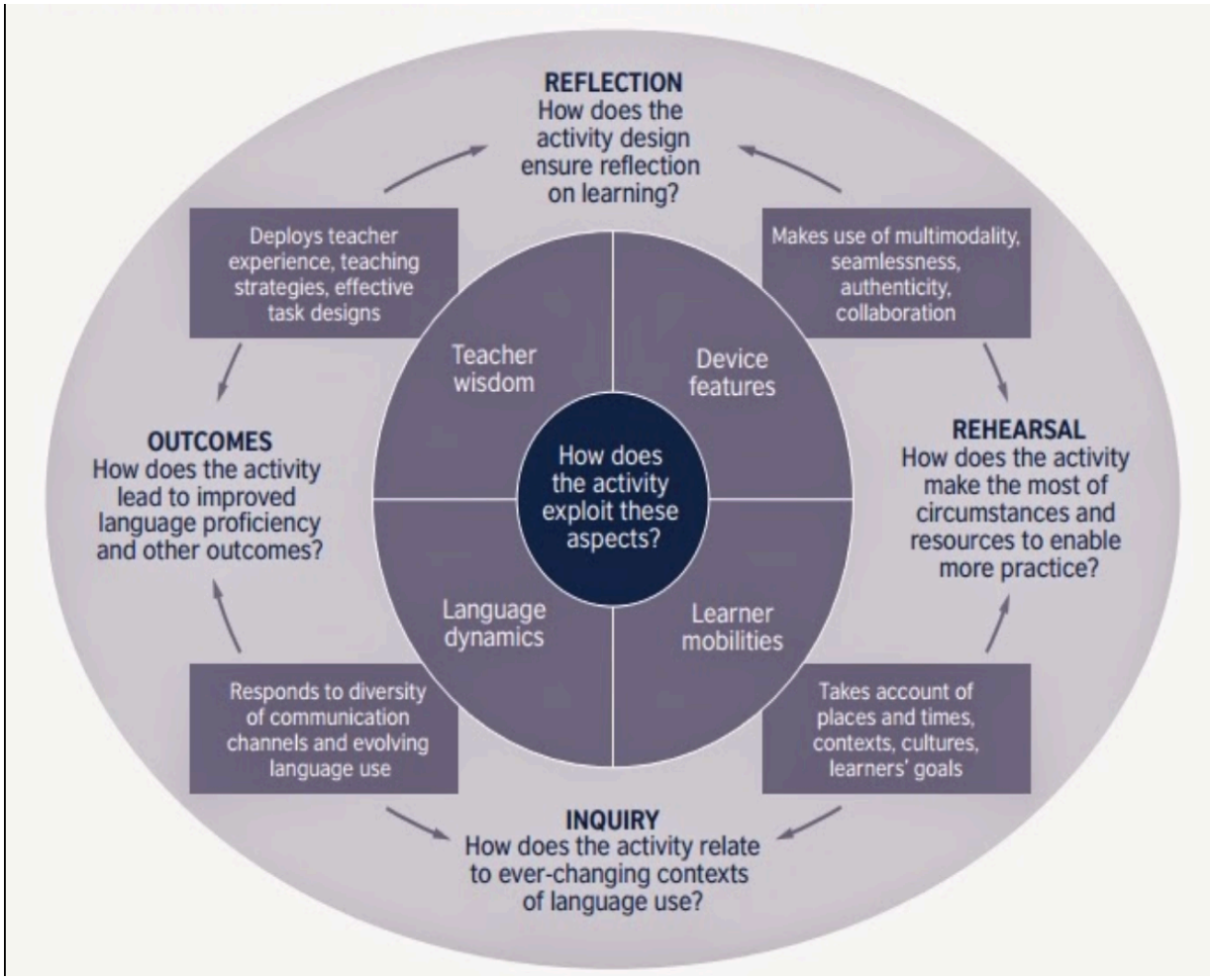


Figure 5.1 Kukulska-Hulme's pedagogical framework for mobile assisted language teaching and learning (also displayed in Figure 3.3)

The overview of data elements from interviews, diaries, questionnaires, the researcher's logbook, as well as pre-test and post-test results, are categorised and aligned with the elements of the pedagogical framework in Table 5.1.

Subject EAP students enrolled on pre-sessional course to develop EAP skills in preparation towards major degree courses (Bachelor and Masters)			
Elements of pedagogical framework	**Data elements about installed apps** *(participants' feedback)*	**Data elements about socialising apps** *(participants' feedback)*	**Data elements about traditional approaches and other individual learning approaches** *(participants' feedback)*
Learner Mobilities	*Learning with apps is convenient and modern*	*I enjoy learning in a group with my friends and my teacher*	*I learn better with TV subtitles and my sticky notes around the house*
Device Features	*Installed apps are good but require improved quality and efficacy*	*Socialising apps are fun, attractive and motivating*	*I feel comfortable applying my own strategies and learning styles*
Language Dynamics	Post-test results (a few positive outcomes) '*Installed apps do not usually contain the necessary words, but have mixed-level words*'	Post-test results (expected positive outcomes) '*Socialising apps were based on EAP words from the students' course book*'	Post-test results (expected positive outcomes) '*I translated all the unknown words in the book and other sources into my first language for better learning and understanding*'
Teacher Wisdom	Install the app and learn autonomously. Learn the first 200 words outside the classroom and apply to tasks and activities in the classroom	Send 5+ new words to students' smartphones on socialising applications. The researcher provides words on a daily basis, informally outside the classroom, for formal instruction inside the classroom	Participants incorporate sticky notes, visuals, subtitles, audio and voice recording strategies and other individual learning styles, most of which they have been brought up with. '*I have created my own socializing group where I teach the learnt words received from the teacher*'

Table 5.1 The display of elements of pedagogical framework and data elements of the study

The above categorisation of data elements from the present study using the pedagogical framework by Kukulska-Hulme (2015) leads to the development of a new framework (Vocabulary Germination) in the shape of a tree, developed by the researcher, based on the pedagogical approaches incorporated in the present study which have resulted in successful integration of smartphone socialising applications for vocabulary development, selected and prepared by the teacher and accommodating the adoption of other inclusive approaches too, as illustrated in Figure 5.2.

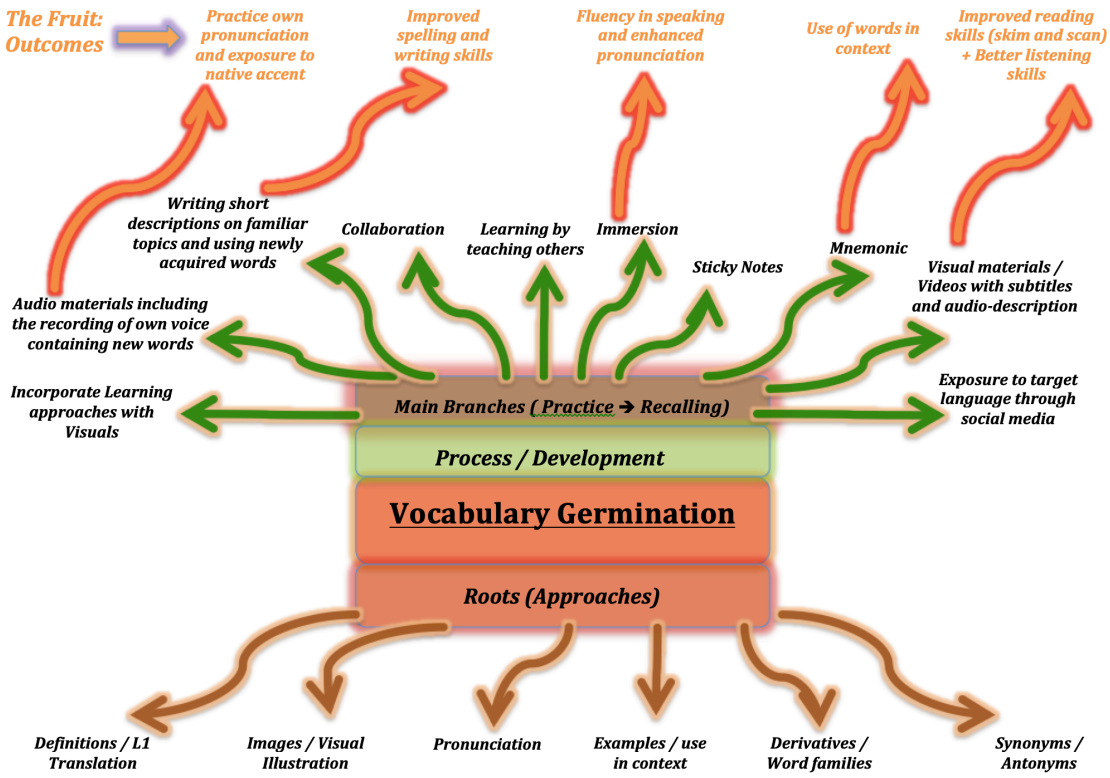


Figure 5.2 Vocabulary Germination framework

According to the results of the study, and illustrated in Figure 5.2, successful language learning requires different approaches, alongside a teacher's facilitating and initial scaffolding approaches. This is contrary to most traditional and common approaches used for vocabulary teaching, where learners may receive just the target words alongside their definitions and sometimes examples. While several other similar vocabulary development frameworks may

have been developed in previous studies, the Germination Framework in Figure 5.2 aims to cater for the adoption of inclusive learning approaches and agrees with the fact that there is no single approach for teaching and learning new vocabulary items. Learners require exposure to multiple approaches and not just the word and its definition. The teacher plays an important role in the preparation and the delivery of these approaches that have been incorporated in the present study, and therefore shaped the framework, that are:

- The target words, their definitions (while allowing learners to use their L1 translations as well)
- Colour images
- Pronunciation of the new words (native British accent)
- Examples (more than one example was provided where a word included two different meanings such as 'irritation', 'resolution', etc.)
- Derivatives and word families
- Synonyms and antonyms (for example: accurate and inaccurate)

The learning process is expected to be stimulated with the implementation of the aforementioned approaches. Language development (seen through the main branches of the tree) may be expected subsequently through practice and recalling approaches. Language practice (in the present study and the new framework) was mostly based on modern (technology-based), traditional (pen and paper based) and individual (collaboration, learning by teaching others, mnemonics, etc.) approaches. While the framework's roots are based on the proposed approaches (smartphone and smartphone applications), the developing branches confirm that oxygen and sun (traditional and individual approaches) are as important as water and other minerals (Stage 2 aspects) taken up by the roots. The process may be completed fruitfully when the newly acquired vocabulary items are accurately produced across all four skills (reading, writing, listening and speaking) in the classroom or in the end of course assessments.

Chapter six: Discussion

6.1. Introduction

It is a common belief that technology has dominated the everyday life of teachers and students and there is no doubt that technology has made not only learning and teaching lives easier for some, but everyday life as well. For example, previously-used telephone calling cards have been replaced with smartphone applications such as Skype, Viber, WhatsApp, Telegram and Facebook messenger for calling long distances or making international calls. Although some countries in the Middle East have barred the use of the aforementioned applications, nevertheless, there are other applications such as VPN (Virtual Private Network) available that can provide full access to the barred applications. From a teacher and learner's perspective, technology has introduced virtual classrooms, online assignments and electronic or distance courses, the existence of which would have once been impossible to imagine. The availability of online materials and e-libraries is probably the biggest breakthrough regarding teaching and learning with technology. Similarly, from a researcher's perspective, paper questionnaires and paper mails have been largely replaced by emails and online surveys and questionnaires. Interview transcription has become easier too and in most cases they do not require human efforts. Likewise, teaching and learning has changed due to the integration of technology inside and outside the classrooms. Teachers and students are trying new approaches that not only make teaching and learning easier in a range of cases, but interesting and 'fun' as well.

The integration of technology has not only improved teaching and learning, but it has also proven to be economically friendly, such as cutting the costs of travelling, parking, buying books and renting venues as well as having access to the vast number of books online. The use of computers and technology has always been perceived necessary in all sectors of education. In particular, during the last two decades, employers mainly expect "IT literate" candidates and they are less likely to offer jobs to candidates with limited IT skills. This subsequently makes IT skills and knowledge attractive to both employers and students (Selwyn, 1997). Not only employers, but in the future, one can reasonably imagine innovative educators taking advantage of young people's familiarity with mobile telephones, their

effortless use of the technology for which they are labelled as “digital natives” (Prensky, 2001, 2003, 2005, cited in Howland, Jonassen & Marra, 2012).

Similarly, the use of technology in the classroom has become the norm in many places, and whether the teachers and learners are willing to integrate it or not, technology has dominated the attention of educators, stakeholders and subsequently the teachers and learners. Schools and institutes which lack the use of technology can be underrated and may not be preferred by prospective students and their parents. In other words, there is usually a strong preference for schools with state-of-the-art facilities, and by this, the availability of modern technological approaches such as smart-boards and other similar devices is questioned by potential learners. However, despite strong favouritism towards the use of technology in classrooms, would all learners and teachers feel comfortable using technology and easily embrace this approach? There will always be a number of teachers and learners who will opt for the teaching and learning approaches which they have used in the past and have found equally effective, that are traditional approaches, as well as their own individual learning practices.

This study has investigated the effectiveness of different types of smartphone applications used for language learning and in particular, used for vocabulary development in English language. The discussion will be based on whether, despite all of the aforementioned advantages, the integration of technology and smartphones in particular could be an absolute answer to successful and effective teaching and learning, based on promise and prediction. Is there an absolute need for an improvised teaching methodology both in class and outside class learning and teaching? Could blended learning and the integration of smartphones be successful and effective and possibly allow technology to overtake and dominate traditional learning and teaching? Despite the numerous advantages and pros, how much instruction and guidance should be provided in terms of learner autonomy? Even if the learners are encouraged to use the applications for language learning and vocabulary development, should they be given the choice of choosing their own application, or should the instructor recommend an application that is useful and reliable? Moreover, how might the learners perceive the use of applications for learning, whether they be effective, motivating and worth installing? And finally, what other approaches might the learners choose that could be based on individual learning approaches and found effective? These questions will be answered and discussed in detail in subsequent paragraphs.

The data in a previous chapter were presented in a structured way, indicating where in the sample they derived from. The findings contained detailed documentation of data collected

throughout the study and presented, as obtained, through graphs, tables, and charts, as well as words. A similar approach to that of Meyer (2001) was opted for, where there were stages in which data were presented through establishing a chronology, coding, writing up the data according to phases and themes (p.341). This chapter compares the current results with a previously developed theory, also known as analytical generalisation (Yin, 1989, cited in Meyer, 2001). Likewise, having linked the emergent theory with existent literature, the internal validity and generalisability will be enhanced through the comparison of the similarities and differences, linking findings in the present study, with claims presented in the literature review.

6.2. Discussion of research questions

As mentioned in the 'Introduction' chapter, the rationale for conducting the research and incorporating smartphone applications outside the classroom was to improve and develop the learners' advanced and academic language, which was a requirement for their major degree courses. Due to the time constraints in the course and inside the classroom, explicit vocabulary teaching and spending a sufficient amount of time on pre-teaching target vocabulary items in the classroom had not been possible. Despite its importance across all four skills in a language (reading, writing, listening and speaking), vocabulary teaching and testing was not considered as a major language component in the instructional planner. As a result, students' progress in the pre-sessional course was mostly slow and very limited production of the advanced and academic words occurred in the classroom. It was therefore felt necessary to arrange for outside-the-classroom instruction for vocabulary teaching, which was neither totally autonomous, nor just a recommended practice, but a form of instruction that involved the class teacher facilitating the language that was expected to be used in the classroom on the following teaching day.

The enrichment and development of advanced academic word knowledge is a crucial requirement for all pre-sessional students, in order to succeed in their major degree courses. Having a sufficient knowledge of the academic word list, students will not only be able to produce assignments of an academic standard, but will also be able to use the synonyms and other derivatives (incorporated in the present study as well), in paraphrasing and accurate referencing that is essential in order to avoid plagiarism and academic dishonesty. Similarly,

the word families included in the present study helped the participants in multiplying the size of their existing vocabulary (as reported by participants in their interviews), which subsequently enabled the learners to cope with the heavy demands of the course where writing and reading tasks were concerned. As the knowledge and competence of these target words is a 'must-have', it is equally important for the teacher or facilitator to know the average number of words that the students are going to need for their academic studies. According to Smith (2018), there are 570 headwords in the Academic Word List, developed by Averil Coxhead at Victoria University of Willington, which frequently appear in academic texts. It is therefore safe to argue that the number of words that were delivered in the present study (400 words), should assist the pre-sessional student participants develop their academic word knowledge to some extent.

The main research question of the study focused on whether providing support for informal vocabulary acquisition and development via smartphone applications influence learning and teaching of vocabulary that could beyond the study lead to the production of recognised quality academic assignments. To begin with, the rationale behind conducting the present study and structuring the main question was to find out if additional instruction outside the classroom could assist the learners with their vocabulary development. Vocabulary items were based on advanced proficiency level and academic knowledge that can be used in the production of university level academic assignments. This is a necessity that is absent from many foundation year university students, despite their IELTS and other similar testing systems qualifications. As mentioned previously, due to time constraints, vocabulary items could be pre-taught outside the classroom (ideally prior to the new lesson) and save the classroom time for spoken and other activities, recalling the words learnt at home. The immediate recall of the newly-acquired words would also aid retention in the long term. Similarly, recalling new words in an appropriate context in the classroom and in the presence of the class teacher could further assist comprehension.

In responding to the main research question, the present study can confirm and claim that additional practice outside the classroom through smartphone applications results in a developed vocabulary knowledge that is a necessity for academic assignments. Having said this, the claim does not refer to all and every kind of application, but certain applications created by certain developers, which can be incorporated with an active interaction between the teacher and the students. This refers to an interaction that creates a virtual learning community and where the teacher is still overseeing the instruction, with the students feeling

part of the learning community. Applications with the features mentioned above might not be present in typical teaching and learning applications, available to install and download into smartphones and use synchronously or asynchronously, but they are present in socialising applications that are mainly used for social purposes.

The use of socialising applications and programs for educational purposes is not new. Skype is a common example where educational interactions have taken place over the years and have proven to be successful (Kamont, 2009). The present study, therefore, confirms that socialising applications can prove to be more effective when compared to applications that lack interaction between the teacher and the students, such as installed vocabulary learning applications. This will be discussed further in sections 6.2.5.1. and 6.2.5.2. of the present chapter, in the sub-guiding research questions.

6.2.1. RQ1.1. How important is vocabulary development for an international student studying in the UK and what previous and present aid is available to them in order to enhance their academic word knowledge?

As mentioned in the background to the study part of the Introduction chapter, it is important to promote vocabulary development and to arrange teaching sessions that are dedicated to vocabulary enrichment. This is possible through explicit vocabulary instruction and testing, whether in the form of testing the production of specific items or rewarding vocabulary richness, and thereby providing necessary incentive. While the majority of English language institutions around the world, and pre-sessional language courses, promote communicative language teaching and try to discourage instructors from active vocabulary teaching, words related to general English could be learnt through the communicative approach. However, for academic English, instruction-based and active vocabulary teaching is crucial. Therefore, direct instruction and informal sessions outside the classroom were arranged where learners had the opportunity to benefit from the previous and present aids available to them in order to develop their vocabulary. The present aid consisted of smartphone applications including their up-to-date features, whereas the previous aid has been learners' own materials such as bilingual dictionaries and notes in their L1.

Regardless of how competent a learner might be grammatically, communication in any second language is impossible in any meaningful way without the knowledge of vocabulary.

Likewise, vocabulary development is a priority area in language learning and the biggest, single component of any language course, expressing the wide range of meaning through the knowledge of words (McCarthy, 1990) as well as having a great importance in the four pillars of any language: speaking, listening, reading and writing for the following reasons:

- Speaking: To learn vocabulary items for discussion in debates in academic contexts, participating in seminars, to become an active listener by asking questions pertinent to the discussion as well as to be able to perform well in oral presentations.
- Listening: To understand words used in different types of lectures and most importantly listening parts used in examinations as well as to learn words prior to attending the class in order to become actively involved in the listening task.
- Reading: To be able to learn words to describe reading texts. Also words related to the key components of the text are extremely important when relying on academic sources later on in major courses.
- Writing: Similar to the reading element above, the knowledge of academic vocabulary items for writing tasks and producing an academic text is equally important. The most significant need arises when students need to paraphrase a written text, but also in cases when learners are required to use synonyms or alternative phrases, such as the language used for softening and hedging with respect. For example, using 'could be considered out-dated' instead of 'worthless'. Referencing and citation of this document or piece of assignment might be correct, but what about the academic language? Words other than core academic and technical vocabulary items are the use of connectors and cohesive devices to make the text clearer, as well as the language required for reflection, evaluation, critical analysis, stance, argument and language used in producing different genres. We could therefore summarise the importance of EAP vocabulary in writing skill in particular as of great significance in the assessment of the quality of written work (Nation, 2001, p:178) which is again the most important language skill in academic studies.

Furthermore, the pre-sessional programme in the present study also required the learners to understand language functions used to transfer knowledge such as the language for definitions, clarifications, explanations, opinion, stating facts and claiming, language for advice and guidance in any of the aforementioned pillars, that is founded on enhanced vocabulary knowledge. It is therefore safe to say that acquiring a large and varied vocabulary has not only been essential for learners' communicative competence, but the quality of their

academic assignment, and final essays, which is an absolute requirement for their studies later on when embarking on their Bachelor and Masters courses. Similarly, one can argue that an academic language may be more complex than an oral language to acquire, because of its complex features such as abstract literary tasks, and advanced vocabularies. In order to perform well academically, students must enhance their academic language. The informal approach in the present study intended to facilitate vocabulary development through smartphone applications saved face-to-face classroom time for other useful tasks, such as pair-work or group-discussion.

6.2.2. RQ1.2. How effective has adoption of an inclusive approach by learners to language learning been alongside smartphone-based support?

According to the findings in the previous chapter, the majority of the participants had incorporated non-application or personal practices for developing their vocabulary. These individual approaches included:

- Auditory learning (learning by listening to their own recording that included the target words).
- L1 translation of the target words and using bilingual dictionaries.
- Mnemonics and applying newly acquired words to familiar people in order to retain the meaning for longer.
- Immersion and living in the target language country.
- Learning by teaching (forwarding and teaching the received words through the socialising applications to friends in other groups).
- Using the more traditional sticky notes.
- Last but not least, visual learning and the incorporation of TV programmes and movies with subtitles in particular.

As far as the present study is concerned, data collected from diaries and interviews clearly indicated that participants enjoyed watching visuals outside the classroom, where no teacher or formal learning was involved. Based on their personal choices for the genre and the preferred style in which they wanted to learn, participants arranged their own resources and

language learning strategies. It is therefore safe to say that even if academic contents are not covered in most TV programmes, general English language is developed and enriched, that is also essential for the students' language comprehension across all four skills (reading, writing, listening and speaking).

Notwithstanding, previous studies have also supported the role of TV programmes in enhancing academic proficiency. Academic performance was enhanced through media usage as stated by Anderson et al. (2001) in a longitudinal study. The study also confirmed that a sequential viewing of educational programmes by pre-schoolers could result in having high academic grades in their adolescent years, particularly when educational media is watched with a focus on educational objectives that once again increases the probabilities for higher academic performance. While there are certain benefits and advantages in watching television programmes, there are also negative effects such as behavioural problems caused by viewing televised violence, particularly in adolescent students (Schmidt & Vandewater, 2008, cited in Ramirez, 2012). However, if educators use the media strategically and provide the students with a visual socialisation of the target language within a cultural context, L2 students will more likely benefit from TV programmes in the target language (Ciro, 2007, cited in Ramirez, 2012). Nonetheless, the participants in the present study were all over the age of 16 years and perhaps less likely to have been emotionally influenced by televised violence or other negative aspects of the programmes. As stated by Grabe, Kamhawi and Yegivan (2009) and Kirkorian et al. (2008, cited in Ramirez, 2012), the benefits of viewing the TV programmes are linked to age and social factors, the level of academic proficiency, as well as the learners' personal background.

In order to elaborate further on programmes available on television, Porcel (2009) believes that watching films gives the opportunity to work on the same thing as you do when using a textbook or a recorded exercise in the classroom. She believes that watching films in the classroom has many advantages, such as motivation, spontaneous learning, improved pronunciation and intonation, and is a compliment to a listening exercise in the classroom. The question is, however, does a film or movie or any other TV programme contain the same number of essential vocabulary items that learners are required to know, which could be made available in an academic movie made by the course director or textbook supplementary material organiser? In other words, how many essential vocabulary items might be learnt in a two-hour movie pertinent to academic or general English? Would all teachers be willing to spend additional time preparing and choosing a film in spite of the numerous advantages?

On the other hand, some researchers believe that videos may not encourage learners to look up the meaning of a word immediately, as they do not want to miss an important scene while searching for the meaning in the dictionary. Although, this could be feasible if the TV programme can be paused (where possible with the availability of new technological features) and the new word's meaning searched for, making a note of the scene in which the new word appeared and labelling the new word with the note and subsequently resuming the programme. Watching TV programmes, dramas, documentaries or even listening to the radio on their smartphones when the new vocabulary item is heard or encountered means that there are more chances of looking for the definition of the new words immediately after it is encountered, because the learner is in the process of watching an action and would not want to miss an important message conveyed by the new word. As far as retention of the new words is concerned, recurrence of the words from one TV programme in another TV programme could be very useful and effective and therefore requires watching several TV programmes.

As far as other technological resources for learning are concerned, none of the participants mentioned websites for developing their language, where learners can find a language partner with whom to learn and practice their target language. When asked about their opinion of language learning websites, the participants reported the following points that resulted in the websites being less popular when tried for language learning (see Appendix 15, researcher's logbook for opinion on websites, 15.08.2017):

- *Language exchange partners are usually offline and more interested in learning than in teaching.*
- *The website developers are not known and so are the language exchange partners, not everyone is there to learn, but they are also there to find partners for friendship.*
- *More preference towards native speakers to learn from.*
- *What language skills are learnt and practiced, typing and chatting or speaking with voice-enabled functions too?*
- *With paid websites there will not be learning partners but teachers teaching online with more focus on learning and little or no focus on socializing. Whereas with a free website, learners might be less focused on learning and more on chatting, since it is free and learners have more freedom.*

Based on the above feedback regarding websites for teaching and learning, the present study could generate further questions that might concern the materials and the design of the

teaching materials used on the website. For instance, are the materials designed to meet learners' needs? The most important question about these free to learn website is: why would someone teach for free? What do the teachers gain from teaching for free? Is it building experience, volunteering, or does language exchange really take place and teachers and learners learn each other's languages? If yes, how is the teaching and learning scheduled? Are equal numbers of hours spent on teaching and learning or does learner X spend more time on educating learner Y? And how honest are both sides at teaching the language honestly and conscientiously (where learner X is putting more efforts at teaching learner Y while learner Y is less honest and consumes the time on learning, instead of teaching learner X)? As a language exchange website, could there always be an interest for the other language as well? Take the scenario of an Afghan speaker who aims to learn English but can never find a learning partner, because none of the members are interested in learning Pashto and Dari (the official languages of Afghanistan)? Would the Afghan student never find a language partner then? Also, does one of the learners always have to be the native speaker of the target language? Are there any teaching and learning etiquettes to consider? For example, some messages may lack formal greetings and introductions and lack courtesy (such as "hi! I need help with my English"). For all the aforementioned reasons, websites may not always be an ideal choice for EFL learners, particularly the free websites that lack formal teaching standards.

In the same manner, playing language games has not been reported or perceived effective for language development. Not only has the age of the current student participants been the reason for not mentioning games as an effective technological strategy to learn, but also the fact that games should be played in the classroom when the students are bored or as a wrap-up activity at the end of the lesson. As a result, learning through playing games can be less successful when compared to other approaches and strategies. One reason could be time constraints and the fear of losing when playing the game with an opponent. Time constraints also result in providing little time to focus on the definition of the word and other possible meanings. Even if the vocabulary items used in games are not new, but learners have been exposed to the definitions and uses previously, the focus is mainly on winning the game, beating the opponent instead of learning and mastering the new word. The attention, therefore, is diverted from learning, to winning.

To conclude, the seven points mentioned at the start of this section, that are based on learners' personal practices and used for vocabulary development, can be combined with smartphone

applications for effective acquisition of academic vocabulary items. Table 4.1 in Chapter 4, page 121, shows the individual learning record of all twenty participants and as can be seen, the participants with the highest score are mostly the ones who have incorporated personal practices alongside smartphone applications.

6.2.3. RQ1.3. What role does the instructor play in appropriately utilising the smartphone for both in- and out-of-class-learning?

It is important that pre-sessional instructors and students are aware of what is expected from them and what they can expect from each other in terms of academic language development and preparation towards major degree courses. The instructors are responsible for the knowledge, skills and abilities that these students are going to possess by the end of their studies in the pre-sessional courses, that will be lasting and of significance to the learners (Palloff & Pratt, 2009). As one of the targeted audiences of this study, pre-sessional instructors are not only expected to help learners' improve their EAP language in oral and written skills, but also facilitate developing students' vocabulary skills both inside and outside the classroom. The findings in the present study indicate that it is equally important for the instructors to implement strategies that could maintain the learners' interests and motivations in the task of vocabulary development instead of producing a long list (on a paper or a smartphone app) of words at the beginning of the course and dismissing them with a mundane task of memorising and learning the words. Participants also believed that it is important to make sure that learning progress is consistent at every stage (which words to learn and when) and they do not feel overburdened with the number of recommended words to learn. The "learning burden" (Nation, 2001 p:23) in the present study was reduced by the instructor. The instructor carried most of the burden by spending time outside the classroom, preparing slides, selecting images and examples and subsequently, provided the learners with the target language in the comfort of their homes, in an informal and sociable way.

The researcher who also played the instructor's role in the present study, was not only a qualified and experienced teacher, who had a sound knowledge of the syllabus and why it was important to enhance the students' academic word power, but she also possessed adequate knowledge in incorporating modern teaching approaches to facilitate learning beyond the classroom. The instructor not only played the role of a language teacher, but she also played

the role of a group member – actively involved in the learning, a community member – establishing a learning community and being a member of the community, a comic and an entertainer – providing humorous and interesting visual illustration to motivate learners, a mentor and a facilitator as well as consolidating autonomous learning outside the classroom, while playing the role of an observer for a successful recall inside the classroom. Consequently, participants not only enjoyed learning, but most of them succeeded at developing their vocabulary knowledge and achieving above average scores in their post-tests.

6.2.4. RQ1.4. What are students' perceptions of informal learning using smartphone applications that influence more formal aspects of the programme such as classroom practice?

As mentioned previously, based on the findings in the present study, the participants showed a strong preference towards the socialising applications, instead of the commonly installed and recommended learning applications on smartphones. As reported in Table 4.6 and Table 4.7 of Chapter 4, all of the participants owned a smartphone and the majority of them were using it on an hourly basis, which not only confirms the significance of smartphone use in daily life, but also the tool's suitability for acquisition. The participants had not only expressed their own interest and motivation for learning with the socialising applications, but had also confirmed that there was a minimum chance of forgetting to open the applications or procrastinating to learn with the socialising applications as was the case with the installed applications. Therefore, the "Push Notification System" (Kallookaran & Robra-Bissantz, 2017), where the teacher is required to provide the messages at a certain time of the day, resulting in the students returning more often to the applications and sticking to a given learning schedule than students who do not have push enabled or have a personal schedule, maintained interest in the participants, waiting to receive the new words of the day. To sum up, students were willing to incorporate smartphone applications for vocabulary development into their daily lives as long as the applications were 'fun', motivating, and involved an active interaction between the learners and facilitator, contrary to most installed applications that are forgotten or uninstalled after installing for the first time, without making an effective use of them (as stated in feedback from participant number 6, Appendix 14, who strongly supported the idea of socialising apps used for learning, by encouraging her friends to join the groups and considering implementing a similar approach for teaching in the future).

When learners realise that they are not just sent available and ready-to-use online materials that do not normally include all of the target EAP words required for mastery in the enrolled course of study, but efforts have been put into preparing a pre-sessional course's own picture dictionary that could be kept and made available to future EFL students as well, there are more chances of language production in the classroom. The majority of the learners appreciated that the instructor had to spend many hours outside the classroom on the slides containing these words with other multimedia features such as voice, and in return, this encouraged most of them to put efforts into learning and subsequently using the words. As a result, their efforts at learning and developing their vocabulary were witnessed through the production of the newly-acquired words in the classroom during discussions and speaking activities. As reported in the Researcher's Log in Appendix 15, participant number 14 has shown great pride in his verbosity and the display of his word power. The present study reports improved performance in formal aspects of the classroom such as both formative and summative assessments, through informal learning, using the smartphone applications.

6.2.5. RQ1.5. How does the social aspect of language learning influence vocabulary development and affect learners' perceptions of installed applications in comparison to socialising applications?

6.2.5.1. Installed application

The entries in the installed application incorporated in the present study were randomly selected and they were not from the same language level as described (IELTS). The packages in this application contained words from different levels. On the one hand, there are words that are extracted from an advanced level source such as 'superficial', 'prudent' and 'innumerable'. On the other hand, there are words that are selected from a lower-intermediate or elementary level, such as 'mouth', 'billion', 'pop-corn', 'keyboard' and 'teapot'. It is not clear how an IELTS level student is not supposed to know the meaning of these words. Moreover, there are numerous words that refer to older uses of the English language and are very rarely used these days. This raises questions regarding the quality of the application and the fact that the application is not developed by someone who has a sound knowledge of both contemporary and old English words, or knowledge of common IELTS words. The overall reliability of such applications is considered through the screenshot in Figure 6.1.

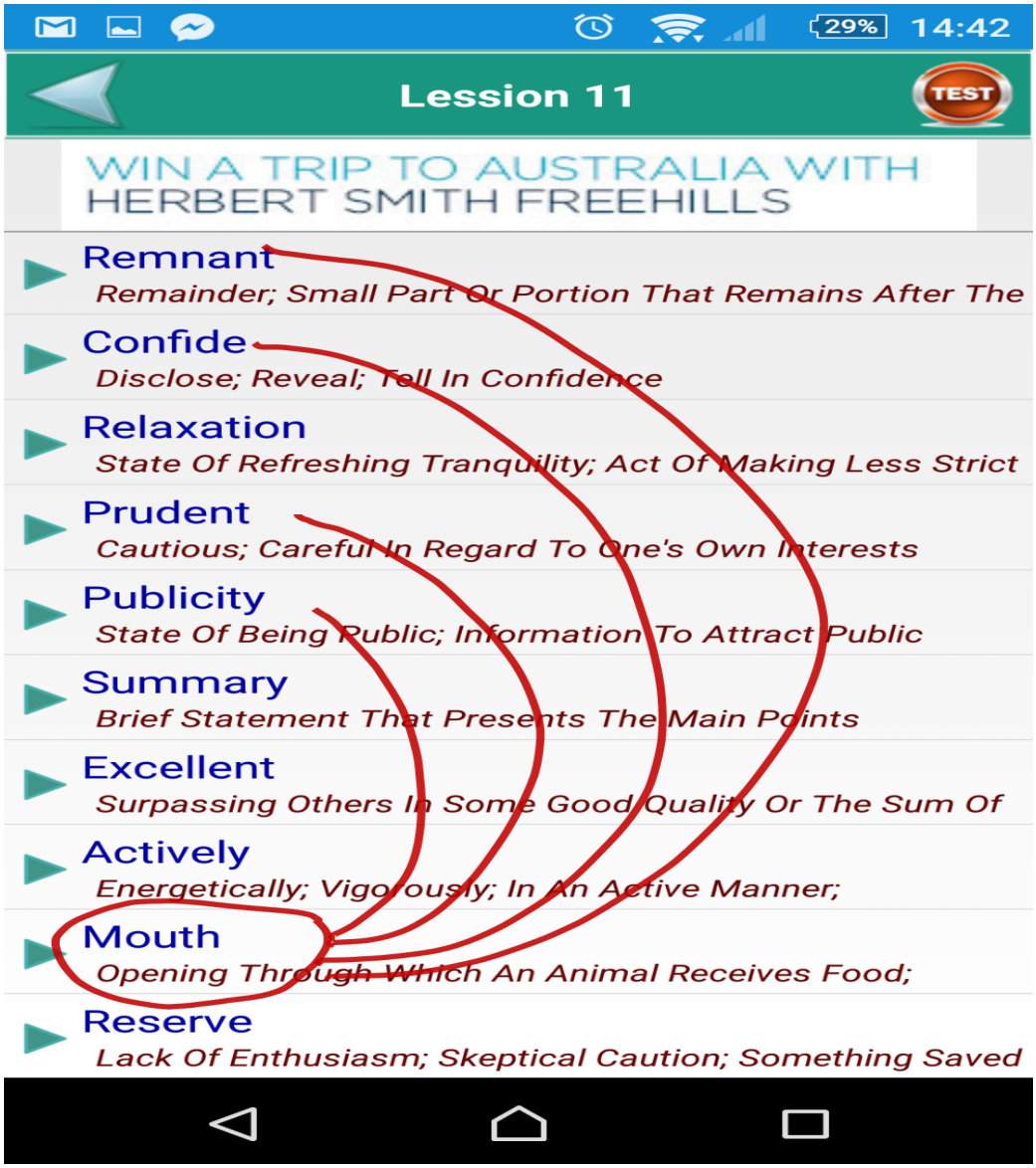


Figure 6.1 Random selection of words

In terms of visibility and benefits available for visual learning, applications installed on mobile telephones for vocabulary learning may not always be helpful. This could be due to, as mentioned previously, all new vocabulary items appearing in the same place, on the same device, with no pictures or visual representation, and once the acquisition process is complete, the application may be abandoned or uninstalled. In addition, despite the tremendous increase in the use and advancement of modern technology, sometimes readers prefer to jot down key information. These readers and users could use screenshots, image capturing or automatic copy and paste methods or approaches to save key information. Or, they may prefer traditional approaches using a pen and paper or notebook in order to manually record

notes about the new words. One reason is that, having read, written and highlighted the note on a piece of paper, the reader is more likely to retain and remember the information for longer and have the note placed before him for a quick glance while working on something else. Saving notes on techno-gadgets may not provide the opportunity to have more than 2 or 3 notes available in front of him on the same device at the same time, due to screen size limitation (see Appendix 14, participant number 13).

To elaborate further on the efficacy of installed applications used for vocabulary development, their "systematic vocabulary development" may not be interesting and effective for long-term retention, but instead offer a list of rather bland or mundane tasks of memorising or going through rather complicated and confusing exercises. One particular application has the following mottos: *"don't just memorize, achieve mastery"*, *"Ditch the flash cards and stop memorising definitions"* (http://vocabulary.com.2015) (see Figure 6.2). Vocabulary.com teaches words by systematically exposing learners to a wide array of question types that are believed to help the learners understand the meanings as well as the nuances of every individual word being learnt. This application costs around £4 to install in the mobile telephone for both the teachers and students. If the application is found effective, the costs involved will be worth it. However, if it does not help the learners master the words as claimed, the money is not well-spent. In terms of the definitions of the words, they are more difficult than the actual words as they include other new words which make the students search for the meaning of the words appearing in the definitions, and therefore diverting from the point of focus. Since the application is a monolingual English-to-English application. The previously explained example of the word "cat" may also be applicable in this case (see Figure 4.7 page 167).

The application developer adds: *"Even after you've achieved mastery, we'll continue to reinforce what you have learned to make sure that it all stays fresh in your memory"* (see screenshot in Figure 6.2). How has the retention been guaranteed and based on what evidence? On the contrary, chances could be that the application is opened a few times during the first week of purchase and installation, and then rarely accessed again. They also claim: *"when you look up a word in our dictionary, you'll read a friendly explanation that you will actually remember. It's as if your favourite teacher were explaining the word to you"*. It is in fact quite the opposite, since definitions are mostly more difficult to understand and complex than the actual word (see the screenshot in Figure 6.3).

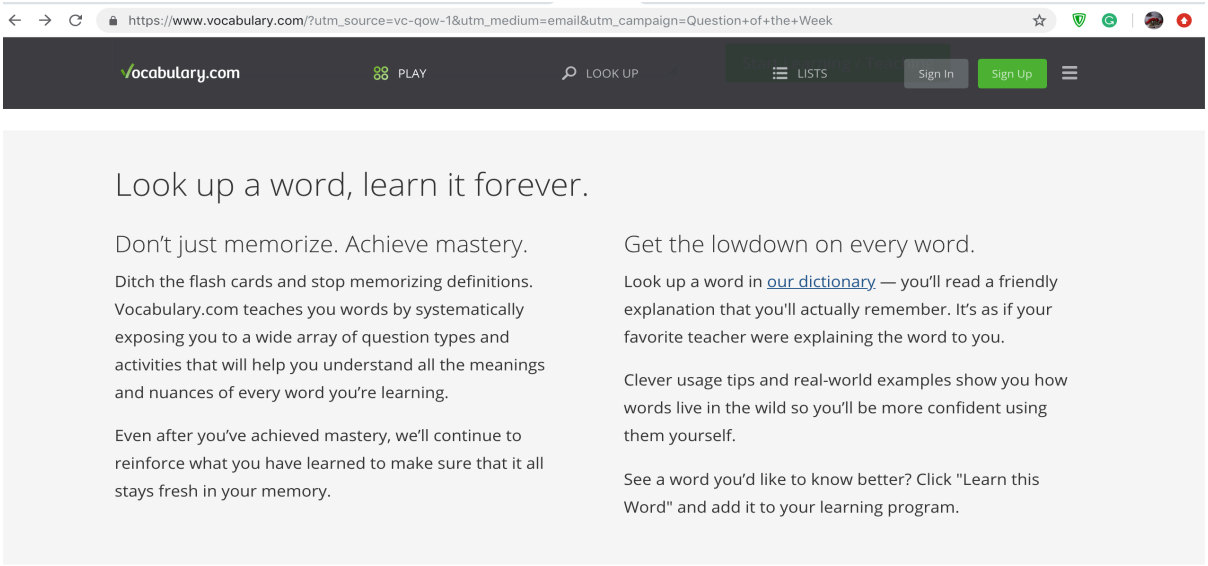


Figure 6.2 Guaranteed retention

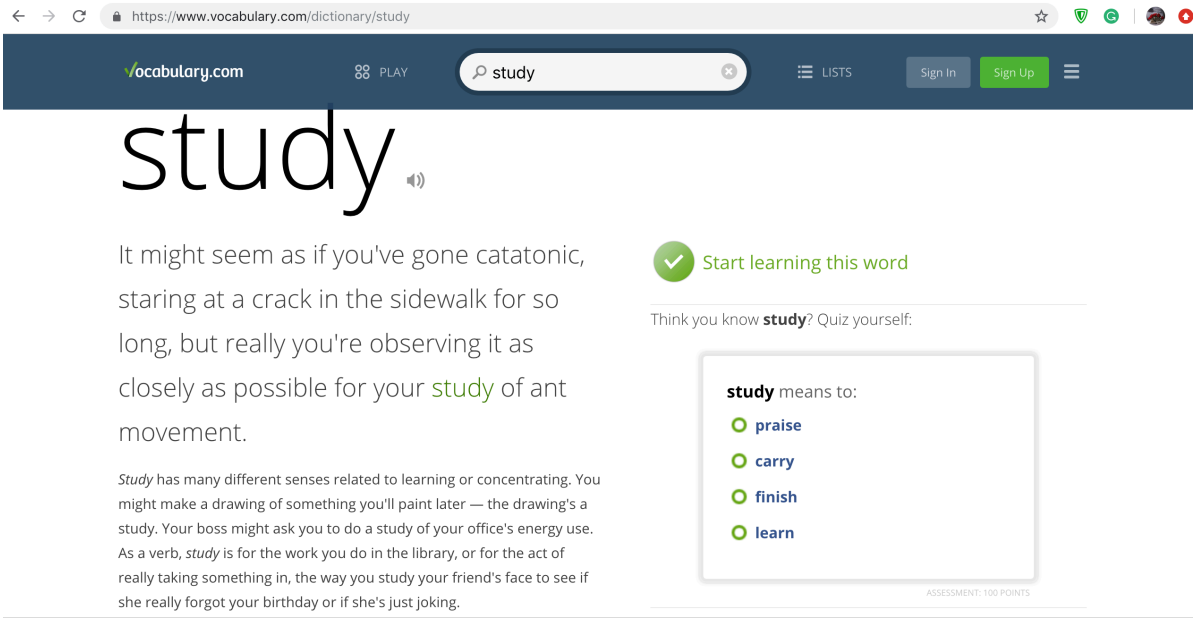


Figure 6.3 Example of a definition that is harder than the target word

Moreover, despite their popularity and a thousand plus downloads on smartphones, the installed applications do not often improve EFL learners' vocabulary knowledge, as shown in the present study. To reiterate, the majority of the participants had confirmed the installation and availability of these applications on their smartphones and having used them previously for learning according to data obtained from the questionnaires. But the pre-tests showed their

knowledge of existing words was extremely rudimentary. Future vocabulary applications, including the most trusted and accurate ones such as Cambridge Dictionaries and Oxford Dictionaries should ideally be designed in a way that enables language learners to add lists, add notes and attach files to a particular vocabulary item; for example, they should be able to add L1 definition, personal example, or upload matching images. Cambridge already has this feature, but not for individual words, only as a 'notes' or 'lists' section within the dictionary that is available and thus requires more advanced features.

Another similar application called 'Phase 6', created by a German developer and mainly in German language, was reviewed for its appropriateness for recommending to English language learners. The initial obstacle for the user can be that the application is in German and there is no English language option available to navigate through. But the researcher managed to access the app as a student (through the image and visual description). Other problems (see Appendix 18) included registration and subscription that involved specific costs, and this may deter the learner/user as there are other free to use applications available. Likewise, the app is not free to use for teachers, and they too have to pay the registration and subscription fees. The resources in the application cost around £7.99 and both the teachers and students are required to pay. Moreover, the exercises and activities lack sufficient instruction and clarity and it is not clear whether learners are required to match, fill in the gaps or select the correct answer from a drop-down menu. The researcher had to click on 'see answers' to understand what the exercises required the learners to do. The app is mainly designed for German learners who are interested in learning other languages; the user must have knowledge of the German language to use the app. The in-built dictionary in the application is also in German and words from German are translated into other languages, not the other way around. Similarly, the reviews about the application are also in German, which makes the decision about whether the application is appropriate for EFL learners difficult. The application therefore was not considered for implementation in the present study, because of the language barrier as well as its cost.

However, another application, quite different from 'Phase 6' in terms of user-friendliness and learning efficacy, is the BBC Learning English app. This application is by far more attractive in terms of visual incorporation of the language and motivating as real life and authentic learning is encouraged (see Appendix 19). Lessons are similar to what learners might receive in the classroom, but they are short and bite-sized (normally 2-6 minutes) and delivered at regular intervals, instead of leaving the learners with an entire wordlist on a single occasion. It

is downloaded by 1 million plus users and has received 4.4 out of 5 stars by more than 5,000 reviewers. The majority of the reviews are positive, with a few recommendations to the developer and most importantly, the app is completely free to install in smartphones. The application not only includes interesting and 'fun' images (similar to the present study), but also video clips and real actors performing and acting a particular aspect of language. Not only are learners able to install the app in their smartphones but they are also able to receive language input on social media applications such as Instagram, where questions and answers are available. The app includes teaching of vocabulary items, grammar and pronunciation. The majority of the educators recommend the app to their learners without any reservations and expect an improvement in the learners' language for all the positive features that the BBC Learning English app has.

However, the contents of the BBC app are mostly general, and the focus on academic English is quite limited. The clips or lessons might be based on something which the learners already know or do not need to know (e.g. problems with dating) and not based on their academic needs. Also, the learning space is public; learners may feel isolated amongst a million other learners and it is not the same shared learning space with friends or classmates that encourage collaborative learning. And most importantly, there is no teacher-student interaction that might involve teacher monitoring and intervention when progress is below expectations. Nonetheless, the BBC Learning English application could support learners with extended revision and successful recall of learnt vocabulary items, mainly through reading and listening, as well as improving English language grammar that is also a focal point in the BBC application.

To conclude, installed applications might be useful for generating learner autonomy, since learners have the option of making their own notes as well as trying to find their own ways and approaches for learning and practising, but equally important is what they learn (the quality of the application, the knowledge and skills of the developer, the accuracy of the contents, words and their definitions, example sentences and spelling) and how they can retain the learnt words. Similarly, it is very important to recommend applications to learners that are reliable and approved or recommended by other learners or users. The reviews provided by other users, the number of stars out of five given to the applications, by how many reviewers and what comments or top comments have been given to the application, all play a major role in deciding which application to choose or recommend to learners for developing vocabulary in English language.

6.2.5.2. Socialising applications

The socialising applications (WVTFM) sought to develop the students' vocabulary bank and for them to learn words that were going to assist them with their studies. Particular attention was paid to the amount of time the learners/participants had for acquisition, the number of words provided daily and how the words were arranged in order of importance (400 essential words that appear frequently in their course books and are mainly required for a successful completion of their EAP course), instead of expecting the learners to master 2,000 words in 10 weeks.

One of the main attributes of the aforementioned applications in the study was the incorporation of images of the target words. The visual incorporation of definitions in the dictionaries is not new. Numerous other popular sources have already embraced the strategy and are developing it further in the future. Evidence for this can be found in the picture dictionaries such as Cambridge Picture Dictionary (1996), Oxford Photo Dictionary (1992), Longman Photo Dictionary, paper and audio CD pack by Breng (2006) published by Pearson Longman, as well as other sources and websites such as English test store.Net (which has 300 lessons of 60 topics), and finally applications such as EPV-ENGLISH vocabulary which is an English picture vocabulary application available on the App store and Android Market. However, most of the contents in the aforementioned sources refer to concrete nouns, where finding images is easier than abstract nouns, and mostly aimed at young learners, whereas finding images for certain words is not always easy and occasionally impossible.

Similarly, Google Images is mostly able to provide a visual stimulus and description for the majority of the words. However, certain verbs, adjectives and adverbs might not have images on the Google search engine, for example, the word 'consistent' or 'consistency'. The current study aimed at including not only nouns but other derivatives such as verbs, adjectives, and adverbs through including the entire word family with every new word, alongside its definition, examples, pronunciation and images. Word family inclusion was particularly important where a clear and concise image could not be found for a particular adverb such as 'presumably'. In such cases, instead of the adverb as the target word, the noun 'presumption' was chosen in order to find an image more easily. The adverb was sent and included in the

word family list alongside the word ‘presume’. Images were only provided for the main words, not every word in the word-family list. This was mainly to avoid inundating learners with more than 4 words per day. Also, synonyms and antonyms were included such as ‘decisive and indecisive’ for one word. As a result, finding the images was daunting and time-consuming, but well worth it, according to the feedback received from the participants.

6.3. Linking the findings to existing literature and showing the similarities and differences

There is a plethora of research in the field of teaching and learning with technology in general and smartphones in particular. However, not only have similarities and differences in the previously conducted studies opened doors to further research in the field, but due to advancement and development in smartphone features, recently conducted studies have made some of the previously conducted studies somewhat out-of-date and have encouraged researchers to take a new insight into the area, focusing on updated functionalities of smartphones. There have been similarities and differences between the previous studies and the present study, as there will be between any two studies, regarding smartphone application integration for vocabulary development. Table 6.1 outlines topics discussed and compared between the existing literature and whether it is supported or refuted in the present study based on the findings. Each area or topic mentioned in Table 6.1 will be discussed further in subsequent paragraphs, in the same order in which they appear in the table.

Topic	Findings (present study)	Existing literature	Similarities	Differences
A. No one size fits all solutions	The majority of the participants' successful outcome was due to opting for different approaches alongside smartphone use	Teaching and learning should take place in more than one medium (Glen, 2008, cited in McCready, 2013)	Yes	
B. Mobile telephones can help students learn contents better	Positive outcomes in both stages of application integration	Phone-cards are more effective than paper flashcards (Rinehart, 2012)	Yes	
C. Vocabulary notebooks	Digital vocabulary notebooks in smartphones	Effective for developing vocabulary (McCrostie, 2007)	Yes, but a digital vocabulary notebook	
D. The effects of WhatsApp in EFL students' vocabulary development	Socialising applications have been effective including WhatsApp	WhatsApp significantly improved EFL students' vocabulary (Bensalem, 2018; Alshammari, Parkes & Adlington, 2017; Khalaf, 2017; Almekhlafy & Alzubi, 2016)	Yes	
E. Intentional vocabulary learning is more effective than incidental	Incidental vocabulary learning is more effective	Intentional vocabulary learning is more effective (Hulstijn, 1992; Laufer & Yano, 2001; Nation, 2001)		Yes
F. Incidental vocabulary learning is more effective than intentional	Incidental vocabulary learning is more effective	Incidental vocabulary learning is more effective (Ahmad, 2011; Horst, 2005; Pitt, White, & Krashen, 1989)	Yes	
G. Novelty wanes off gradually	The novelty was in the daily images sent to the participants	The initial excitement of phone use wears off (Rinehart, 2012)		Yes

Topic	Findings (present study)	Existing literature	Similarities	Differences
H. Technology/smartphones is not the tutor, but a tool	Teacher intervention has been crucial	How to infuse technology effectively (Pagliaro, 2013) Technology is not panacea (Chun, Kern & Smith, 2016)	Yes	

Table 6.1 Similarities and differences between the existing literature and the present study

A. No one size fits all solutions

Previous studies have researched the effectiveness of MALL in: 1. grammar; 2. listening; 3. reading; 4. speaking; 5. writing; and 6. vocabulary (Lin, 2014; Hsu, Hwang, & Chang, 2013; McClanahan, Williams, Kennedy, & Tate, 2012; Brenneman et al., 2007; Liu & Chu, 2010; Azar & Nasiri, 2014; Demouy & Kakulska-Hulme, 2010; Li & Hegelheimer, 2013; Lu, 2008; Stockwell, 2010; Thornton & Houser, 2005; Wu, 2014; Wang & Shih, 2015) and most of these have reported significant outcomes in the aforementioned areas. The present study, however, has researched the effectiveness of MALL in developing vocabulary of adult English language students. However, regardless of how effective any technologically enhanced approach towards teaching and learning any aspect of a language might be, it may not be the ultimate answer to every individual learner's learning needs. There may never be a 'one size fits all' solution to the advancement of technology enhanced teaching and learning (McCready, 2013). This argument is further supported by McCready in that it is not only up to a few faculty members to agree to exploring new teaching practices, but it is the entire institute that should successfully lead the change and understand the necessity of the change. The availability of sufficient resources, incentives aimed at promoting the use of technology, the involvement of senior leaders in advancing the innovative use of technology and the integration of more than one medium of teaching (Glen, 2008, cited in McCready, 2013) whether with or without technology involvement, in order to cater for every learner's needs, can result in successful learning.

B. Mobile telephones can help students learn contents better

As far as the present study is concerned, the use of smartphones and smartphone applications proved to be effective to a great extent, an innovation that was reported very little in the past. However, despite its success at integration and participants' satisfactory performance, the task of preparing additional materials outside working hours and delivering it to the students

outside the classroom has certainly been time and energy consuming, despite its numerous advantages. The primary benefits and advantages have been the fact that the learners were prepared for the target language inside the classroom while having gone through the pre-teaching vocabulary stage at home. But, to what extent would other professionals in the field be willing to spend additional time and efforts outside contract hours? Would they be willing to sacrifice their free time to the development of their learners' knowledge without incentives or additional pay? If such practice is to be achieved, it is not only an individual faculty's responsibility, but the entire institution that should promote the approach, instead of expecting an individual instructor to take the responsibility alone.

Where additional pay or monetary incentives are not possible, the teacher might require reduced working load and fewer teaching hours in order to cater for the hours that they are expected to spend outside their contract hours. The innovative ideas that could benefit the institution for their new and interesting approaches, while leading the evolution of modern teaching practices, should be rewarded and encouraged to further contribute in developing similar ideas. Sharing creativity and innovatory teaching practices should not be seen as a daunting task, but should be encouraging to the fellow faculty members, in order to use their expertise and contribute towards bringing new and interesting teaching approaches to the field. This could help the learners with their learning, assist the teacher with managing their in-class time better, and help the institute's reputation by allowing room to develop diverse teaching approaches created by the institute's own faculty members.

Regarding the effectiveness of smartphones in vocabulary development, the satisfactory outcomes in the present study (where the post-tests report an increase in the number of words known after the study in both stages, particularly in Stage 2 of the present study) are not unprecedented. In a study by Rinehart (2012), participants preferred flashcards saved in smartphones over a stack of flashcards carried in pockets. Not only was this due to the ease of access and portability, but the fact that smartphone learning is modern and useful, as assessed by the students. Likewise, the majority of the participants in the present study agreed that smartphone learning is more motivating and engaging, despite one or two participants who indicated they still prefer more traditional sticky notes and other paper copies of materials. These student participants were highly attached to their smartphones and usually 'fiddled' with their devices when they were out and about. In such cases, they could easily open their applications in which they would have saved their contents for developing their language. Even the more traditional learners would still have their hand-written notes created on a piece

of paper in their own way and would have a photograph if the paper taken was saved on their smartphones (see Appendix 14, participant number 13's diary notes). By doing so, the participants chose their individual way of making the smartphone useful, instead of sticking to a more traditional approach and confirming that smartphones do not make a measureable difference, as predicted by Rinehart (2012). As a result, almost all of the participants agreed to use and incorporate smartphones for future learning as well.

C. Vocabulary notebooks

Perhaps the argument to support the efficacy of wordlists and other prescriptive methods was more valid in the past, with these approaches being available during the pre-smartphone era, when learners did not have the chance to access social media/socialising applications. However, at present, when teaching and learning can be smartphone orientated and the use of different features of the smartphones introduce a novelty in teaching and learning, both incidental and intentional methods could be effective. Nonetheless, regarding the effectiveness of the two methods, incidental learning has by far been more effective through the use of socialising applications, where the prescriptive vocabulary applications and websites especially designed for vocabulary learning did not succeed at encouraging the majority of the participants in the present study to learn. But the socialising applications (W, V, T, FM) and the social media which could result in unconscious learning, proved to be more effective.

Quite similarly, one particular approach to language development in the field of English language teaching that has been recommended and prescribed by previous researchers is the 'vocabulary notebook'. For the purpose of vocabulary development, 21st century teaching approaches could support the upload of the entire notebook with 100 entries in the smartphone for its ease and convenience of carrying it everywhere and accessing it at any time. Fortunately, the socialising applications in the present study were not only appreciated for the ease and portability of a notebook in the smartphone but the ease of searching for a particular word that may have faded in the learner's memory. Learners are able to easily search for the word by typing it in the search box of the application where the entire conversation will emerge; the word with its meaning and definition, image and follow-up example sentences all become available to the learners in seconds, instead of flipping through pages of notebooks and spending a lengthy amount of time to find the word.

Moreover, if it is a word where the learners have forgotten the name/actual word but remember the definition and its use, and cannot type the actual word in the search box, they can easily look it up through the relevant images sent for that particular word, by accessing the 'media' folder on the application where all images will be available unless deleted by the sender or receiver. Here, the learners can easily access all images on the screen and find the one they had been searching for. In order to remember the new vocabulary items for longer, and have access or recall opportunities to them even after the study or the allocated period (10 weeks), the socialising applications will have saved all images in the 'media' or 'shared media' folder that will be accessible to the learner even after the study, and can remind the learner of the name of the vocabulary for that particular image.

D. The effects of WhatsApp in EFL students' vocabulary development

To discuss language development with socialising applications further, a handful of previous studies have confirmed the applications' efficacy and positive students' attitudes towards them (Bensalem, 2018; Alshammari, Parkes & Adlington, 2017; Khalaf, 2017; Almekhlafy & Alzubi, 2016). The aforementioned studies have supported the use of the WhatsApp application in particular and have reported positive results in their studies. Provided that learning with WhatsApp and other similar socialising applications is incorporated with guidelines for students with regard to making an appropriate use of the application and avoiding inappropriate behaviour in the groups, the approach to teach and learn with socialising applications could be expected to have numerous positive outcomes. Similar to the outcomes in the studies mentioned above, despite the fact that the use of WhatsApp in these studies included plain text messages, whereas in the present study the target words included images, audio-clips and derivatives, the socialising applications in the present study (including WhatsApp) have been positively reported as effective and have resulted in a considerably developed vocabulary bank, as can be seen in Table 4.1, page 121 in the Data Presentation chapter. The approach has also promoted the idea of incidental vocabulary development, which is both supported and refuted by previous studies, when compared to intentional vocabulary development.

E. Intentional vocabulary learning is more effective than incidental vocabulary learning

To elaborate further, there are usually two approaches to vocabulary learning: incidental vocabulary learning; and intentional vocabulary learning (Wu, 2015). Incidental vocabulary learning is the process whereby something is learnt without the intention of doing

so, as well as learning the words while intending to do another activity. In this case, learning is based on context, to promote deeper mental processing and better retention. In contrast, intentional vocabulary learning disregards the context and is focused on antonyms, crossword puzzles, multiple-choice synonyms and scrambled words for word substitution (Ahmad et al., 2013). Researchers (Hulstijn, 1992; Laufer & Yano, 2001; Nation, 2001) have found that intentional vocabulary learning is responsible for most of EFL learners' vocabulary expansion because new words are difficult and slow to acquire out of contexts without ambiguity. Studies (Hulstijn, 2003; Mehrpour, 2008; Qian, 1996) that compared these two strategies clearly indicated that intentional learning is more effective than incidental learning. However, other studies showed results that contradict the argument (Ahmad, 2011; Horst, 2005; Pitt, White, & Krashen, 1989) and claim that incidental learning is more effective. This latter result is the case in the present study as well, where incidental has been more effective (with W,V,T,FM apps) than intentional learning (with the AWL app).

One of the methods adopted for intentional learning is the 'Word Lists' and/or 'Word Cards' methods, which simplify the learning process so as to increase repetitions with words, which are the prevailing techniques for intentional vocabulary learning. In a conversation about the ten best ways for EFL students to learn vocabulary, Batia Laufer and Paul Nation (2005) suggested word lists and word cards, respectively. Read (2000, p.40) elaborated on the wordlist learning method, with the suggestion of "working through a list of L2 words together with their L1 translations and memorizing the word gloss pairs". Studies by Takaki and Waring (2003) concluded that there are a minimum number of encounters or repetitions needed with a word to recognise its morphological form. Similarly, Xue et al. (2010) detected the neural mechanism of repetition to advance better memorisation and stated that "repeated study improves memory".

F. Incidental vocabulary learning is more effective than intentional vocabulary learning

As far as the present study is concerned, Stage 1 of the study involved intentional vocabulary learning, where learners had to intend to develop their vocabulary by going through a list of words available on an installed application in their smartphones. In this case, learning was planned and time for learning was allocated. However, during Stage 2 of the study, the learners were receiving the target words on their socialising applications, without planning to

learn or allocating time specifically towards learning. In this case, incidental learning was occurring, if the participants were occupied with another activity or receiving the words without prior knowledge or intention. While the previous research studies might support one approach or the other, the present study definitely argued in favour of how the incidental learning approach in Stage 2 was supported, as mentioned in E. The evidence to support the claim can be seen in the post-tests obtained at the end of both stages, where learners performed better during Stage 2 (see Table 4.1, page 121 in the Data Presentation chapter). As much as unplanned, natural and unintentional learning might be effective, it is equally important to introduce ways of teaching, in which learners are exposed to techniques and learning approaches that are new, unique and contrary to the usual routine learning approaches. Some previous researchers have called this 'Novelty' and believe that trying out new approaches maintains the learners' enthusiasm to learn.

G. Novelty wanes off gradually

When language instructors opt for a new approach, whether it involves the use of technology or not, it not only professionally develops the instructor for their innovatory teaching practices, but, as mentioned above, the novelty in teaching also results in maintaining the students' motivation to continue learning. In a study by Rinehart (2012), participants who were initially excited to use their mobile telephones gradually lost the initial excitement and using mobile telephones seemed a routine to them. This was due to the novelty effect in play during the study which, according to Rinehart, diminished as time went on. He further stated that using the mobile telephones for two weeks consecutively could have caused the novelty to wane and suggests further research to support or refute the novelty idea. With regard to the present study, some participants DID exit the socialising groups during the first two weeks of the study and they reported time constraints and extra learning load as their reasons for not remaining in the groups. Others, on the other hand, remained until the end of the study and provided the researcher with 'seen/read' reports after receiving their daily words. Two of the participants were from the previous year who had participated in the professional intervention and had perceived the study positively and therefore requested to be added to the main study groups again, which confirmed that novelty remained afresh for some or did not play a part in their decisions to be involved.

Contrary to a few previous studies and their methods for smartphone incorporation, during Stage 2 of the study, the participants in the present study were not required to use their

smartphones for learning for lengthy periods, but for an average of 10 minutes per day. Secondly, the novelty was in the new words being sent and received everyday, and the new images to look forward to. As a result, the researcher made the images 'fun' and interesting, in order to keep the novelty effect in place. Some researchers may argue that novelty is more important than 'high tech' gadgets in maintaining student enthusiasm. If it is the novelty, then new and different uses of the smartphone should be introduced throughout a semester, to keep the enthusiasm going. Future studies could focus on various new items and techniques in a classroom and compare when and if enthusiasm wanes. To sum up, there might always be a novelty with smartphone use in teaching and learning, since the smartphones are in a constant state of advancement and update, introducing new interactive and interesting applications which will be developed and updated constantly.

H. Technology/smartphones is not the tutor, but a tool

In conclusion, technology integration is not and should not be only about embracing the latest teaching approaches and relying on tools made by others, where the content design and needs of a language classroom are not always met. Moreover, technology integration should not be seen as a goal in or of itself, but as a tool that supports a specific learning goal (Chun, Kern & Smith, 2016). The integration of computers and smartphones in English language teaching is effective, but to what extent does it enhance the teaching and learning? Smartphone applications are available in a very wide number of different forms and types and developed by many different individuals, but how many words of the English language are they able to teach and in what length of time? It is unlikely that an application can be found that contains all of the necessary target words and is able to keep learners engaged on a daily basis, which could be considered the foundation of effective learning. After all, as Pagliaro (2013) states: "Teachers must learn methods to effectively infuse technology, using curriculum as the backbone for integration. Teachers need to learn how to use technology as a tool for learning, not as a tutor for learning".

6.4. Summary of the Discussion chapter

According to the findings in the present study, regardless of how advanced, user-friendly, effective and popular installed learning applications become in future, they will be likely to provide a more artificial learning environment to the learners. Non-conventional learning applications such as socialising applications, on the other hand, may be perceived more effective for their less artificial learning environment, such as the availability of human interaction, collaboration in the group with other human beings and the involvement of a teacher as a facilitator. Nonetheless, regardless of the type of application used for learning, the compatibility and convenience of carrying smartphones might not always facilitate learning. In contrast, smartphones might be limiting the learning due to limited screen size and as a result, most students will need to come up with their own learning approaches, which should be promoted alongside other innovatory approaches.

Despite the ever-increasing development of language-related technology and increased numbers of 'tech-savvy' students, web-based programs and mobile applications alone do not guarantee success in vocabulary development. Traditional tools such as pen and paper, flash-cards and note-taking might still be essential and could amplify the chances of intensive vocabulary learning, instead of considering them obsolete. It can therefore be claimed that modern technological strategies may not be the absolute answer to enhanced learning, but the integration of traditional approaches as well as other personal practices may also be required. Although the central research question and the focus of the present study is on smartphone integration in developing vocabulary items, it does not imply that other traditional, non-technological and individual learning approaches are eliminated from the discussion. To sum up, the majority of the participants who outperformed in the present study had also incorporated non-app approaches.

Chapter seven: Conclusion

7.1. Summary of the main study

Vocabulary development is necessary for the 4 skills (listening, speaking, reading and writing), as confirmed by (Nation, 1994): *"vocabulary is not an end in itself. A rich vocabulary makes the skills of speaking, listening, reading and writing easier to perform"*. The present study did not just deliver the target vocabulary items in isolation and as a conventional homework task given outside the classroom, but first and foremost, the learners were motivated and encouraged to learn these words, followed by a successful retrieval in the classroom and using the newly-acquired words in a variety of activities. Likewise, the words were taught in sentences, with parts of speech tied with other words and through making a connection.

According to data collected, the present study emphasises the fact that education applications in smartphones should be matched to the approaches of learners (visual, auditory, modern or traditional learner, perhaps), the level of learners (beginner, intermediate or advanced) and learners' needs (general English, academic English or IELTS). For instance, one particular vocabulary development application might be found useful and effective by one user but not so useful and effective by another learner or user. When considering such applications, it is recommended to read the reviews of the application by other users and how many 'stars' the application has obtained in terms of user friendliness, efficacy and overall satisfaction. Moreover, plain vocabulary development applications may not be the absolute aids for language learning but there are other aids that need to be incorporated for more successful learning. For example, images, definitions, regular repetition, added L1 notes, relating target words to objects, events and people and if possible linking or attaching a photograph to a new word in order to remember the meaning of the words for longer through association and for an enhanced learning experience. By having the aforementioned features, the application could become unique and possibly stand out from amongst a hundred other vocabulary development applications available for installation on smartphones.

The presentation chapter was based on qualitative (description of the figures) and quantitative (figures and numbers or percentages) methods. The primary finding of the study focused on responses obtained from interview questions, diaries, and researcher's logbook and why participants performed better in one stage and not in both stages. The secondary findings focused on the test results obtained from pre- and post-tests administered at the beginning and end of the two stages at which vocabulary development took place. The secondary findings supported the primary findings and the primary findings answer the research questions regarding informal vocabulary development using smartphone applications, participants' perception of smartphone applications and other non-app approaches that are used for vocabulary development.

The two types of applications incorporated in the present study were compared with each other, based on the pre-test and post-test results of the 400 target vocabulary items. Prior to conducting the study, the questionnaires distributed at the beginning of the study confirmed that all of the participants owned smartphones with internet access and the ability to install applications in their smartphones which were going to be used for vocabulary development. They also confirmed that they felt comfortable using their smartphones and the majority of them were even using the English language, as the main or primary language of their smartphones. However, when different types of applications used for learning were compared, there was a significant difference in attitude towards the two types of applications.

The performance of the participants in learning received with socialising applications has been mostly average, with a few outstanding and above average performances, whereas the treatment received on installed applications has mostly resulted in below average performance with no outstanding or above average performance. The main reasons for the significant difference in results from the two different types of applications, as reported by participants, have been the quality and authenticity of the applications, the shared learning community and the availability of the facilitator for supporting the target language. However, as much as socialising applications have proven to be effective and helpful with vocabulary development, other individual learning approaches are as important and should also be applied to learning, when possible. As stated by Pachler, Bachmair and Cook (2010, cited in Lambrecht, 2015) mobile learning is not based on the delivery of contents to mobile devices, and is not primarily about technology, but it is about the successful operation in the process of coming to know and across learning spaces as well as the ever-changing context. It is also about knowing and understanding our daily life-worlds as learning spaces. Consequently, not all

learners prefer the use of applications for developing their language knowledge, but would like to resort to their individual approaches as well as other non-technological traditional approaches which they have used in the past.

To conclude, a single approach may never be successful at vocabulary development or the development of any other linguistic skills. According to the data collected and feedback received from the participants in the present study, while the social aspects of language learning and the adoption of inclusive approaches somehow proved to be of success, it is down to the teacher to facilitate these two. The teacher's role therefore is vital in language learning for the following pedagogical reasons too:

- The number of words selected to teach on a daily basis should be appropriate and in accordance with the learners' levels and language learning abilities
- Words should be provided at regular intervals and not inundating the learners with the entire wordlist in one day
- The words selected should be useful to the learners in term of their needs and the courses in which they are enrolled
- Words should not be taught in isolation, but in sentences and through examples (taught in context). The efficacy of learning with examples and in sentences is greatly supported by the participants in the present study
- Most importantly, words should be taught and delivered alongside their visual stimuli for better retention and to instill motivation to learn
- Last but not least, learners need to be in charge of their learning, but teacher involvement is as important, especially during the initial stages of learning and deciding what can be learned. If the teacher is empowered and able to facilitate the learning in an interactive way, then they should support and be the developers of their own applications (in order to meet their contexts appropriately).

The above points were incorporated in the present study and resulted in positive outcomes, placing the teacher's role in the vanguard of language learning, despite the ubiquity of technology with these students.

7.2. Research challenges

As with every research study, challenges will always be inevitable and likely to happen. A study without challenges seems less valid and true and in some cases can be perceived as fabricated. Whether the challenges are major or minor, it is necessary to report them and share them with prospective researchers. The present study encountered minor challenges, which were smoothly dealt with, and major challenges, which could have resulted in losing the collected data. As mentioned in the Discussion chapter, most of the challenges faced during the professional intervention were prevented from occurring in the main study. However, new and unexpected other challenges were encountered during the main study that were dealt with professionally, though not easily.

To begin with, finding images on the Google search engine was not only time consuming and exhausting, but also somewhat difficult in terms of matching the exact description of the image with the word. For example, as mentioned earlier, finding an image to clearly illustrate the meaning for the word *'consistent'* was quite challenging. The Google search engine displayed numerous images but none of them could give the exact visual illustration of the word. Similarly, images for some words would come up with a brand name instead of a descriptive image. For example, the word 'primitive', where almost all of the images shown were images of the brand called Primitive. Likewise, the word 'furious', which could easily generate an image, led to the majority of the Google images based on the movie "Furious 7".

The next unexpected and unpleasant challenge was the use of inappropriate language in one of the socialising groups, by one of the participants. Despite establishing preferred protocols for communication and informing all participants in the welcoming message sent to all of the socialising applications incorporated, this one particular participant's communication proved to be extremely challenging and tarnished the image of learning in socialising groups. As can be seen in Appendix 17B, one of the participants used unacceptable language in the group used for sending the daily vocabulary items. However, the other participants responded to the incident in a mature manner and made the incident seem less serious. The offending participant was removed from the socialising group immediately and the study continued without interruption.

As far as the selection of participants is concerned, of the 45 students who signed the consent forms initially and showed willingness to participate in the study, a total of 20 students remained until the end of the study without dropping out and exiting the groups. However, as 25 dropped out either early or along the journey, data for these participants are not reported. When asked in the next meeting in the classroom why they were no longer interested in taking part in the study, their responses were as follows:

- "too much to study in school, 9-4 everyday, five days a week, plus studying at home"
- "I can't learn from mobile phone, I like to have a list and memorise from the list"
- "learning should be in the classroom only, home is for fun and entertainment"
- "can't be bothered, don't need them, I will forget them very soon anyway"
- "I'm going to study Computer Science, so academic words are not important for me"
- "I thought the study was for a few days, 10 weeks is a long time and I'm not sure if I can stay until the end"

Regarding the value of the study, it is worth considering what the study lost when the 25 participants withdrew from the study. Firstly, obtaining data from 20 participants only may have inconclusively generalised the outcomes by making the study seem quite small-scale. Consequently, very limited diary input was received that could have on the contrary been a documentary of richer learning experiences. Likewise, the open-ended questions in the interviews could have provided twice as many unique learning experiences, reported by the participants. Secondly, contrary to the researcher's expectations, the exits from the groups somehow proved that for those learners, vocabulary development was not a priority area and there were always the basic, high-frequency words to use in their spoken and written language output. Thirdly, having maintained all participants would have motivated other teachers in the department to employ a similar language development approach in the future and have the voluntary participation of their learners. Fourthly, participants who dropped out of the study were mostly from another class and not from the researcher's own class. To have them stay in the groups would have minimised the difference in treating students enrolled on the same course, and at least students from three classes would have benefitted from the treatment. Finally, despite the study's voluntary nature, the less motivated participants could have been encouraged to remain until the end of the study by individually awarding them badges or praise Graphics Interchange Format (GIFs) in the groups, thanking them and appreciating their participation, something that future educational researchers could bear in mind. Overall,

while the researcher perceived the limited number of participants as a limitation and loss, the study shows that some of this loss added to an understanding of different learner approaches. Participants who exited the groups did not embrace the novelty and hoped their vocabulary would develop in ways without direct instruction, as it has often been for many EFL learners.

With regard to data collection, it was quite challenging to conduct the post-project interviews right at the end of their pre-sessional course, whilst all the participants had been looking forward to having a break before embarking on their major degree courses. The duration of the interviews, which was around 10 minutes, had also been less encouraging and therefore several reminders were sent to the participants in the chat groups, inviting them for the interviews. Consequently, some of the interviews were conducted over voice chats in the socialising applications, instead of the planned face-to-face approach. Because of the promised duration of the interviews (10 minutes maximum), some of the participants who wanted to elaborate further on their answers were interrupted and moved on to the next question. Having listened to the interviews later on, the researcher wished more time for elaboration and details regarding the participants' responses had been allowed. Also, participants who had submitted diary notes and recorded learning experiences on a daily basis felt less encouraged to give post-project interviews. They felt that it had been slightly "too much", giving pre-tests, post-tests, questionnaires, diary notes and subsequently interviews. Moreover, 2 interviews were recorded on a poor quality device which produced no output and no contents were recorded as a result. However, notes recorded roughly during the interview on the interview sheets were available and suitable enough to be used as responses to the interview questions.

The biggest and most concerning challenge which could have resulted in producing little evidence in order to support the present study had been the loss of data in the WhatsApp application group. Despite the numerous advantages of learning with the socialising applications, the approach was not immune from challenges and problems. One major technical problem which resulted in having all words and messages deleted from the researcher's WhatsApp group almost resulted in losing 10 weeks' worth of data. This happened after the 10 weeks of sending messages, when the researcher was asked whether to save the chat history or not and the 'No' option was accidentally selected. Luckily, one participant who had saved the entire conversation, alongside the media (images and audio files) on his smartphone even after the study, agreed to send and forward the entire conversation (see Appendix 17A, screenshots of sent messages). This confirms the fact that

there was certainly motivation and love for learning where a learner had kept a portable mini "Pictionary" even after the study was conducted and when he was no longer a participant.

Other research limitations included different formats used in the two parts of the pre-tests and post-tests (see Appendices 10 and 11). The intention for not using the same format in the two parts of the tests, as mentioned earlier, was to generate more thought for decision making and include a variety in the types of questions asked. However, the approach resulted in minor challenges. For example, participants scored higher in the multiple-choice 'A/B/C' format (as the answer was available) and lower in the 'true/false/not given' format (where more guessing might have arisen). The researcher overlooked the fact that the tests were only to assess the prior and post knowledge of the words and should have opted for one format for all 200 questions, saving time, since multiple-choice questions in ELT are mainly used for major examinations that last much longer than a 10-15 minute pre-test. The present study recommends using the same format for all questions in similar studies.

7.3. Recommendations

EAP students usually require additional support with their studies outside the class due to time constraint in the class. Some EAP courses offer a weekly tutorial session, where most of the times, there is little to discuss, and, as a result, the instructors has 1-2 hours of additional time, which could be used for preparing such tasks. Another possible option might be to segregate the task of creating these messages and making them ready to be sent through a shared drive, by all of the instructors in a language-teaching department. For example, each instructor could take the task of preparing 40-50 slides, each containing the target word, its definition, image, example and pronunciation. These could include most EAP words from the course book, saved and shared centrally with all instructors, which could also be used in future courses. If the idea of sharing mobile numbers and IDs with the learners becomes a reservation and instructors are not willing to do so, they could be reassured that in case a contact becomes a nuisance, they can be easily blocked and barred from accessing the instructor both on the mobile network and on the applications used in the study. At the end of the day, it is mainly the instructors who identify the teaching and learning goals for the course and identify their learners' needs and how best they could learn. They will then be able to re-examine their teaching practices, and if there is any possibility of technology integration for

enhanced learning. The faculty members' interest and willingness will enable them to integrate the use of technological tools in order to assist the learners in their learning, of course, with the support from the senior teachers in the department as well as being able to receive resources, additional time and 'productivity incentives', where possible.

7.3.1. Recommendations to teachers

The present study findings recommend the following procedures for teachers/educators who are prospectively considering the use of smartphone applications in their teaching:

- Consider creating a gender segregated socialising group where participants feel comfortable and able to freely communicate with other group members. The Telegram group in the present study is the exemplification where mostly Arab ladies participated and suggested a female only group for cultural reasons.
- The Telegram application is suitable for use where participants do not wish to share their contact details with other group members. Group members in the WhatsApp and Viber application are able to access each other's mobile numbers, whereas in the Telegram application contact numbers of other members are not visible and accessed. Group members may still be able to send each other private messages, without being able to access the contact numbers.
- Regarding WhatsApp and Viber applications, which have similar features, it is recommended to add a close friend, a family member, or a spare SIM number to the groups, to which the words are sent daily. The reason for doing so is to be able to retrieve data (sent media) in case the researcher's handset is lost or a similar incident as with the present study happens, where the researcher lost all sent data due to not backing up chat history.
- As far as the use of the Facebook application is concerned, alongside the use of the Messenger and chatting application, the teacher may also consider creating a Facebook account and pasting 10 new words every day with images. The 'like and reaction' notification from participants should confirm their acknowledgment of the receipt of the words. This could be particularly useful if the students are frequent users of Facebook or other socialising applications. Alternatively, the teacher may post the new words and learners should contextualise them by adding images and sentences in the comments box. Although the passive nature of the learning may not result in

outstanding performance when compared to the "push notification" system in other applications, the tremendous interest in the images could encourage learners to take the lead and come up with their own images. However, for some learners, the option of joining a vocabulary development group on Facebook, and actively engaging with the learning, may seem less encouraging. This is due to two reasons: firstly, the majority of the learners may have more than 100 or 200 friends on their Facebook accounts and new posts from these friends might be seen first, which leaves the learners with little or no time to check the new post/words from the vocabulary development group. Secondly, learners' friends may also be able to see the learners' activities in the learning group, such as learning the new words, comments and likes, unless the vocabulary development is a "closed" group and only the group members are able to see each others' activities.

- In order to minimise the number of messages sent for both images and audio clips (12 messages sent daily in the present study, 6 for images and 6 for audio clips) and to cause less disruption to the learners' social life outside the classroom, educators in future could integrate both image and audio in one message, a feature that was not available during the data collection stage of the present study, but has become available quite recently, in the updated versions of the four applications mentioned above.
- According to the feedback received from participants, images and example sentences should convey the same message. In other words, the examples should illustrate the visual representations of images.
- Similar studies in the future may also point out the advantages of desktop-based application availability on laptops and other similar devices with bigger storage or memory capacity. This is particularly important where data storage or memory on smartphone handsets may be limited. The learners will therefore be able to save the received media where the aforementioned applications are opened as desktop applications on devices other than their smartphones.
- Teachers dealing with learners who are not too keen on learning with smartphone applications should be willing to cater for individual learning approaches and support the learners in their chosen approach for learning.

7.3.2. Recommendations to app developers

Smartphone applications used for language learning and vocabulary development have undoubtedly improved since they were first introduced and are constantly being updated with added features and functions. The majority of the language learners have been able to benefit from the contents to a great extent and have managed to incorporate the apps with their usual learning approaches. However, these learners/users have usually expressed an opinion, through which they have either requested an added or additional feature or have reported a problem with the usability of the app. It is therefore necessary to take the remarks and opinions into consideration, which can usually be read or found in the "Review" part of the application and, based on the feedback, try to improve and update the app accordingly. Regardless of how attentive the developers might be when developing and creating their applications, it may be less likely for them to be aware of individual learning approaches and needs which could only be seen from a learner's perspective. It is therefore particularly important to regularly check and read the users' reviews and accommodate individual learning approaches as well as cater for the learning needs of different choices of learners such as visual, auditory, modern or traditional media.

According to the findings from the present study, all of the participants have expressed a positive attitude towards the incorporation of images alongside definitions of the new vocabulary items. In their diaries, one participant had expressed a wish for having a visual stimulus of every single word in a dictionary. While this may seem less possible due to the size of the application and the word family (not every word has a visual stimulus), and more time consuming for future app developers, it would certainly be worth institutes encouraging their teachers to incorporate images and create little dictionaries. In cases where images are hard to find, teachers may incorporate short video clips or Graphic Interchange Formats (GIFs) in order to visually illustrate the meaning. To conclude on a positive note, one of the participants in the class requested more words (instead of 4-5 words) to be sent in the future to socialising apps with images (see Appendix 15, logbook recording on 25th/08/2017) and on the same occasion another participant expressed a wish for having the 300,000 words from Cambridge and Oxford dictionaries to be available alongside their visual representations (see Appendix 15, logbook recording on 25th/08/2017).

7.3.3. Recommendations to educators

Educators around the world may hold different views and beliefs when it comes to choosing the most appropriate and effective application for developing vocabulary. It is therefore not only the contents that require a careful scrutiny before recommending the application to the learners, but also the developer and the source from which the app has been created. While the majority of the language learning apps are developed by non-native English language speakers who may lack expert knowledge and produce a poor quality app, only a handful of these applications are created by reliable and trusted sources such as Cambridge University Press, Oxford University Press and the BBC. Despite the reliability of the sources, the applications may not and could not possibly cover all of the contents of a language course. It is therefore strongly recommended that teachers in the future familiarise themselves with how to create an application on smartphones, where possible as part of their professional development and adding useful resources to their institution. Not only will their own created apps likely result in positive evaluation for their performance, but will also motivate their learners to put efforts into learning by showing them the amount of work and dedication spent on the apps. By creating their own apps and adding contents relevant to the immediate needs of the learners and ideally from the learners' course book, the apps will also be used by prospective students in the future with a minimum work required for a minor update, as with other apps. While the students might be able to carry their photo-dictionaries with them even at the end of their study, the app will also be a reminder of the professionalism and dedication of their teachers at the institute where they had studied.

While the developers are seeking to produce an application that may meet students' learning needs and be found effective, it is equally important for the educators, teachers and other professionals in the field to make a sensible use of these vastly available applications on smartphones. Educators may begin by testing the app prior to recommending it to their learners, checking the accuracy of the contents and the source of the application. While the majority of the learners might be autonomous learners and learning a language in total isolation and therefore finding these applications effective, other learners who attend a language course and are actively engaged in a formal learning environment might perceive the apps slightly differently. Therefore, regardless of their quality, efficacy and an ocean of positive reviews, the incorporation of language applications during a course of study will usually require a human facilitator. When choosing the most appropriate application to use

for learning and developing vocabulary, it is not only the recommendation of the teacher for that particular app, but their constant engagement with their learners during the learning that makes learning with smartphone applications effective.

As far as other non-application or digital learning approaches are concerned, educators will always need to come up with alternative strategies used for language development, specifically designed for more traditional and non-digital learners. One of the major causes of lack of progress in language development is 'procrastination', as well as lack of motivation. One of the main reasons could be opting for the same usual approach used for learning, instead of using a variety of approaches that could generate novelty in learning as well. If a learner is prescribed and instructed to follow one particular approach for developing their vocabulary, they may soon become bored with that particular approach and procrastinate. However, if listening to the audio-recorded list of words on one day, revising the vocabulary messages received on another day and maybe taking a quick glance at personal notes for favourite vocabulary on the subsequent day, the chances of vocabulary development are greater. All of the above approaches may then be integrated into everyday life activities such as watching TV in a target language or reading real life magazines. It is therefore recommended that learners are provided with a list of useful and effective approaches used for vocabulary development and allowed to incorporate their inclusive learning approaches.

7.4. Future research studies

As a widespread belief, and as mentioned in previous chapters, there is no "one-size-fits-all" or one approach that suits every individual learner. As far as learning with smartphones is concerned, not all participants performed in a positive, expected and hoped-for manner. While the majority found the use of smartphones and smartphone applications effective and useful, some learners did not feel as comfortable with the use of these technological features as they did with their own traditional and individual learning approaches. However, despite this limitation, the researcher is still able to report valuable data and information that not only determines the effectiveness of smartphone use, but the use of smartphone applications as well. Future research studies should focus on how to incorporate modern smartphones with a

touch of "traditional learning approaches" for inside and outside the classroom learning and teaching, where the needs and preferred learning approaches of all learners are catered for.

7.5. Contribution to knowledge

This study contributes to existing knowledge by identifying ways through which international students can develop their vocabulary as well as improving their academic skills when learning second and foreign languages such as English. The study can help students build their vocabulary through various forms of mobile telephone language learning and hence make a contribution to the success of students in major courses. Although the pervasiveness of Information and Communication Technology (ICT) in all aspects of 21st century life is quite clear and well accepted, as Dalton and Grisham (2011) state, it is less clear how teachers might successfully integrate technology into EFL learning, specifically as regards vocabulary development instruction, by promoting the social aspect of language learning and the adoption of an inclusive approach to language learning. It is proposed that the present study will be of particular value and make a contribution to knowledge in the field of intensive vocabulary development for EFL students enrolled in pre-sessional EAP and general English language courses through utilising their smartphones, in the following areas:

- The theory will lead to the development and enrichment of EAP and general English vocabulary which is a crucial requirement for pursuing higher education
- The methodological approach of the study will provide scope for new approaches to be implemented which might not have previously been used by English language instructors
- The study aims to increase language instructors' and language departments' awareness of how smartphones may be utilised sensibly and effectively for EAP and general English vocabulary development

The results of the present study confirm that language learning is not "just" about assisted language learning but about mobile assisted language use (MALU) as well as MALL. Smartphones in particular should be a defining point of reference with the Teaching of English to Speakers of Other Languages (TESOL), placing them at the vanguard of teaching (Achilleos & Jarvis, 2013). As a new contribution to knowledge, the Germination Framework

(Figure 5.2, page. 199) could be used by educators in the field when considering effective vocabulary development by exposing the learners to more than one learning approach. The instructions provided by the teacher as well as the incorporation of learners' own learning approaches could result in a satisfactory outcome in more than one language skill (according to results obtained in this study).

This study indicates that language instructors as well as other subject instructors need to design a method or if possible create their own application, add all of their target words and be the developer of their own language teaching tool. In other words, instructors should integrate smartphones into their daily teaching in a way that is different from the large number of available 'vocabulary learning applications' on the Android market, Google stores and Apple Store, that do not usually contain the teaching syllabus, or keep learners engaged on a daily basis in an interactive way. Creating and developing instructors' own applications is the opposite of installing an ordinary 'vocabulary development application', which the learners open and use for a few days but never bother to look at again. However, the application created by the course teacher and installed will involve regular checks and intervention of the teacher and although it is going to be another "installed" application, the developer who is also the teacher will still be able to regularly interact with her learners/app users by sending a 'word of the day' or a 'quote of the day', for example.

The methods in this study show how teachers and learners might build their own application gradually and add contents to it on a daily basis to have the complete collection of words available to them at the end of the study in 'W,V,T,FM' or other similar socialising applications. If learners wish, or if the instructor is technologically competent, they can create an application, where each and every one of the photograph images will be uploaded as the application contents and shared with not only the participants but everyone else who might be interested in developing their vocabulary who can easily install the applications from the Android market or Apple Store. To reiterate, the main difference between the applications used in the present study and the pre-installed applications, is the daily interaction between the instructor and the learners and most importantly the cooperative work of building the contents together and finally displaying the entire repertoire not only to the developers but to the entire field of English language teaching and learning.

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Appendices

Appendix one (A): Consent form for the participants

CONSENT FORM

Lancaster University

Project Title: Mobile phone messaging and vocabulary development: How learners can integrate an extended tutorial backchannel into daily activity when learning English as a Foreign Language

Name of Researchers: Masuda Wardak
Email: m.wardak@lancaster.ac.uk mwardak35@hotmail.co.uk

Please tick each box

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time during my participation in this study and within 4 weeks after I took part in the study, without giving any reason. If I withdraw within [4 weeks] of taking part in the study my data will be removed. If I am involved in focus groups and then withdraw my data will remain part of the study. PLEASE NOTE: Withdrawing from a focus group can be difficult and if your study involves focus groups you may want to add the following: I understand that as part the focus group I will take part in, my data is part of the ongoing conversation and cannot be destroyed. I understand that the researcher will try to disregard my views when analysing the focus group data, but I am aware that this will not always be possible.	☐
3. If I am participating in the focus group I understand that any information disclosed within the focus group remains confidential to the group, and I will not discuss the focus group with or in front of anyone who was not involved unless I have the relevant person's express permission	☐
4. I understand that any information given by me may be used in future reports, academic articles, publications or presentations by the researcher/s, but my personal information will not be included and I will not be identifiable. PLEASE NOTE: if you intend to make your data available to future researchers via a data archive, you need to add a sentence to point 4 or add a separate point to request consent for this. You could say: Fully anonymised data will be offered to (name of the archive) and will be made available to genuine research for re-use (secondary analysis)	☐
5. I understand that my name/my organisation's name will not appear in any reports, articles or presentation without my consent.	☐
6. I understand that any interviews or focus groups will be audio-recorded and transcribed and that data will be protected on encrypted devices and kept secure.	☐
7. I understand that data will be kept according to University guidelines for a minimum of 10 years after the end of the study.	☐
8. I agree to take part in the above study.	☐

_____ _____ _____
Name of Participant Date Signature

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Signature of Researcher /person taking the consent_____ **Date** _____ Day/month/year

One copy of this form will be given to the participant and the original kept in the files of the researcher at Lancaster University

v27-6-16 (9-2-17)

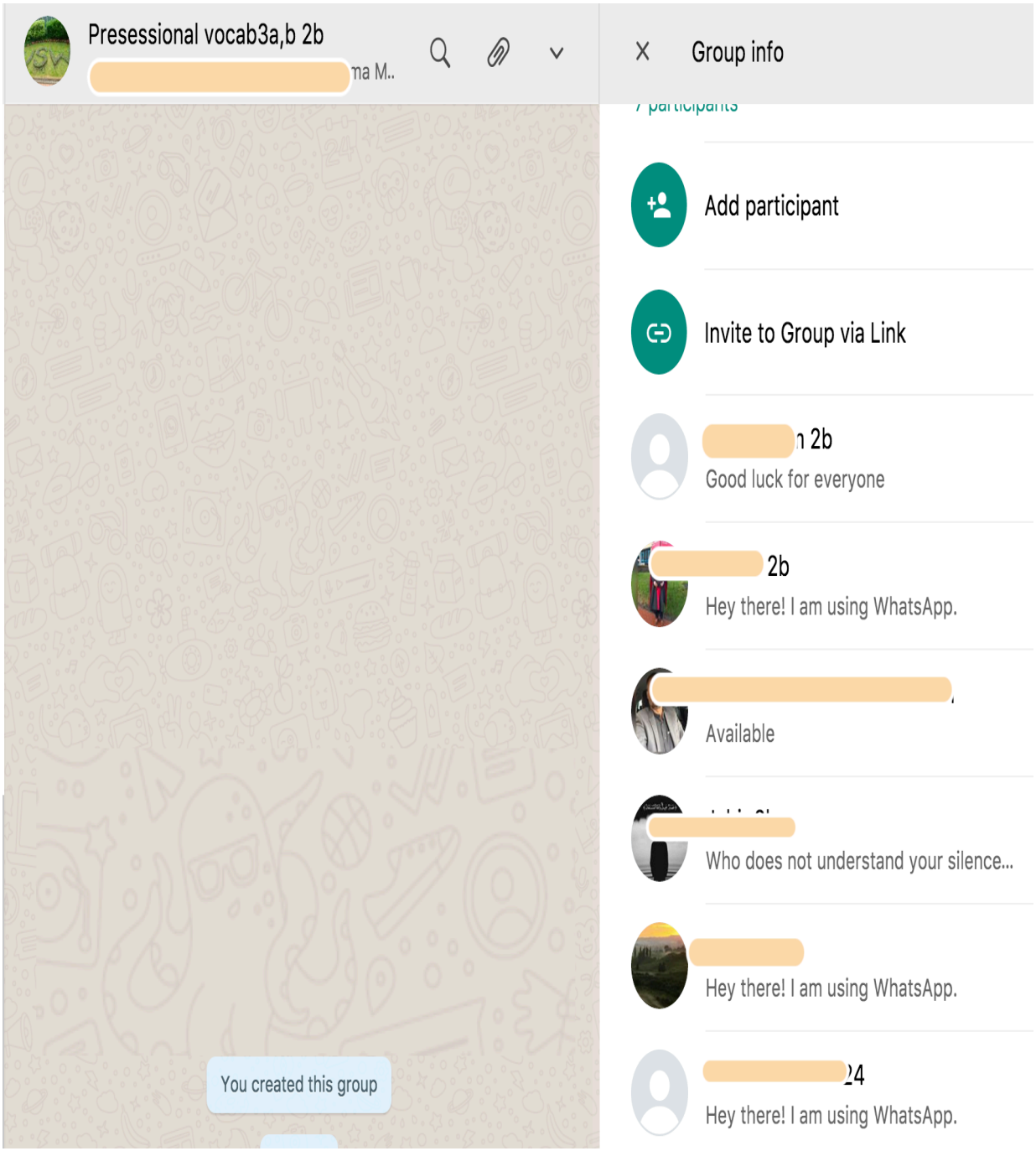
Appendix one (B): Research Guidelines for Participants

"If you decided to take part, this would involve the following:

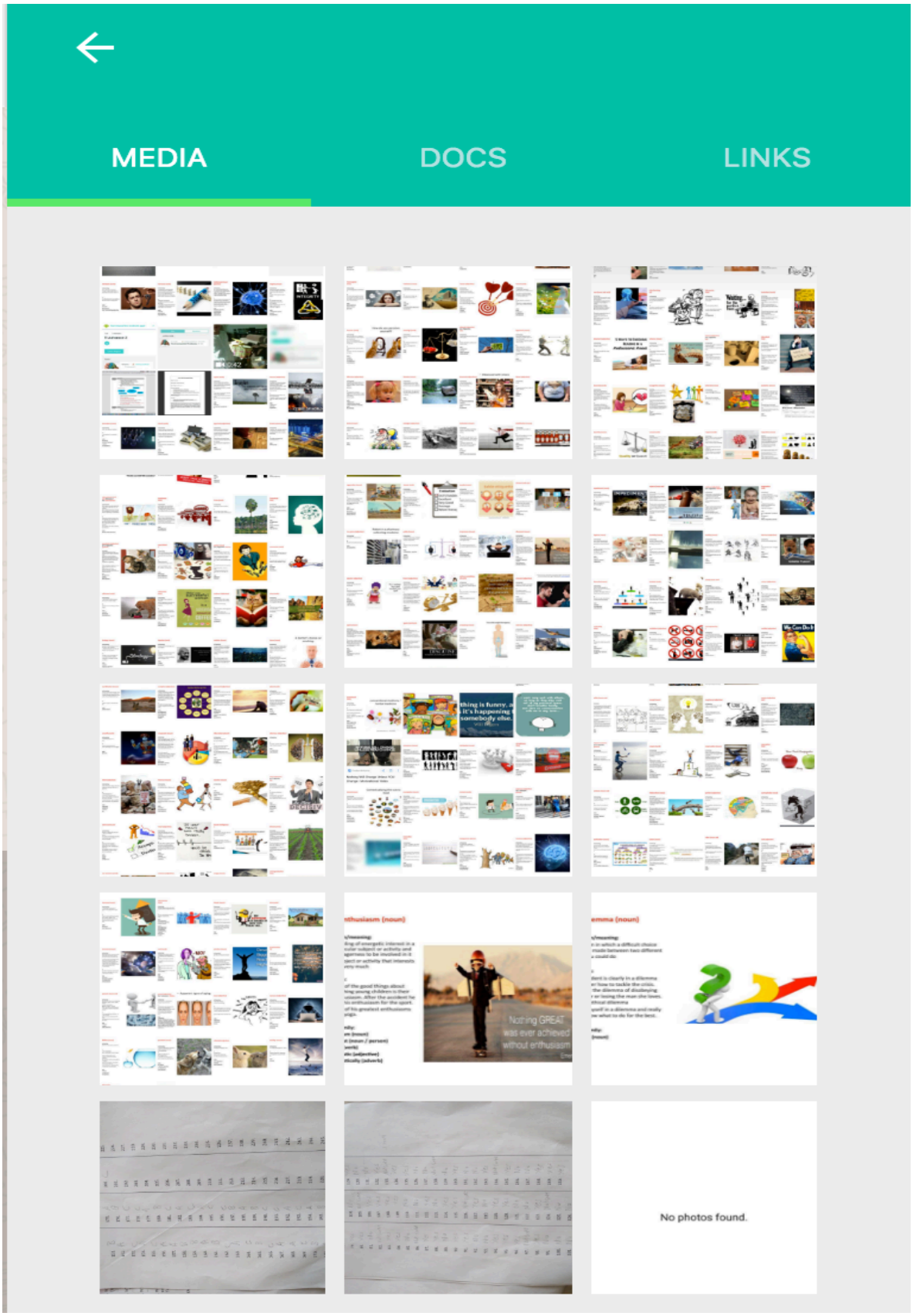
The duration of the study is 10 weeks. During this period, you will be required to use two types of applications on your smartphone and go through two stages of learning. During stage one, the first type of an application is an installed and downloaded app, where you learn 200 academic words for 5 weeks. During stage two, the second type of apps that are socializing apps, such as Viber, WhatsApp and Facebook Messenger. You will be provided with 5-6 new words with images and definitions to learn everyday. There are 200 words to learn in the second stage and this period will also last for 5 weeks. The words will be sent as a message on your WhatsApp, Viber or Facebook Messenger applications. You will have to choose only one of these socializing apps. You will also be required to take a pre-test of the new words, as well as a post-test at the end of the learning period. Each test will take 15-20 minutes. The total number of words to learn during the 10 weeks period is 400 academic words. You will also be asked to complete a questionnaire before the study begins, which will take about 5 minutes and there will be interviews at the end of the 10 weeks period. The interviews will last for 10-15 minutes and will be audio-recorded. You will also be asked to keep diaries, where you can record your notes based on your daily learning experiences. If you prefer to use WhatsApp and Viber apps, your mobile number will be required, which will be shared with other participants who are going to join the group created in one of these apps. After the study, you can easily bar and block contacts or group members from your Viber and WhatsApp groups as well as barring them from calling you or messaging you with a "Callblacklist" app, should you wish to do so. If you prefer to choose Facebook Messenger, your Facebook ID will be shared with other group members and there will be no need to share your mobile numbers. Similarly, should you wish not to receive messages from group members on Facebook Messenger in future, you can easily block them on the app. If you are willing to participate, please state your preferred application and provide me with your ID or mobile number for the chosen application. You are encouraged to take part in the study, as you will benefit from a developed and increased academic vocabulary knowledge, which is not only important for your pre-sessional course, but you are also going to be relying on academic words during your major courses such as Bachelor and Masters, when producing assignments of an academic standard. You would be provided with academic words in a fun and interesting way with images and pronunciations, outside the classroom on your smartphones, which you could keep on your phones for as long as you wish and able to access these words wherever and whenever".

Appendix two: Professional intervention stage contents

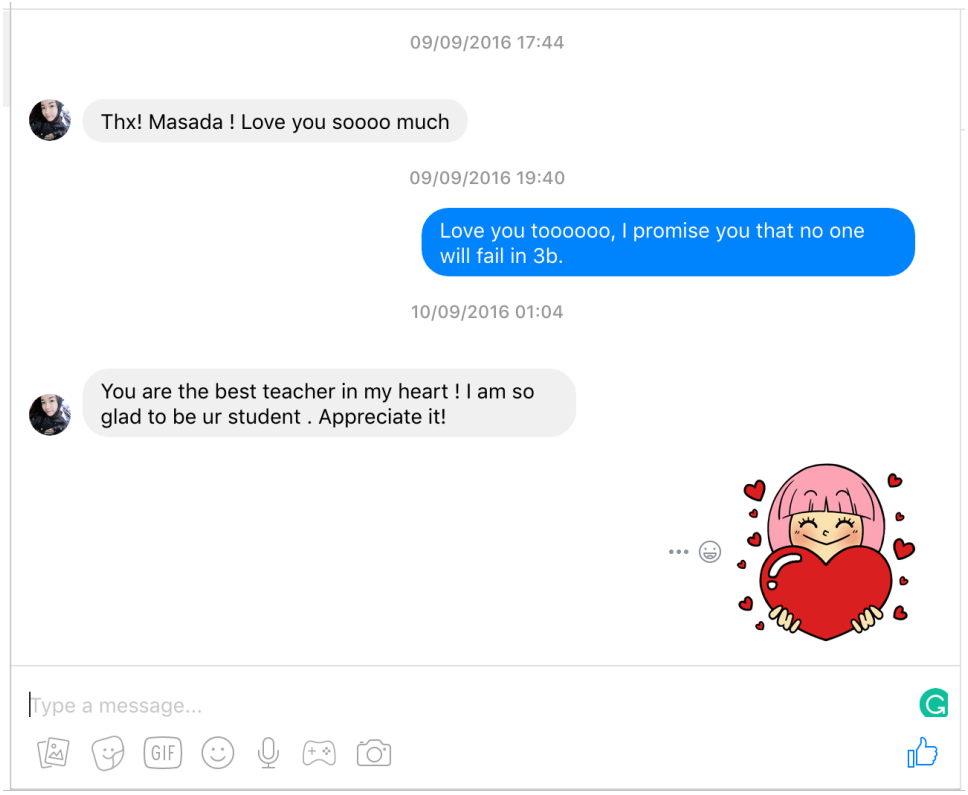
(A- screenshots of creating the group in 2015 and again in 2016, words sent on apps, words might appear different to the word-list in the main study. B- students' satisfaction and gratitude expressed for the study. C- private messages sent in the group)



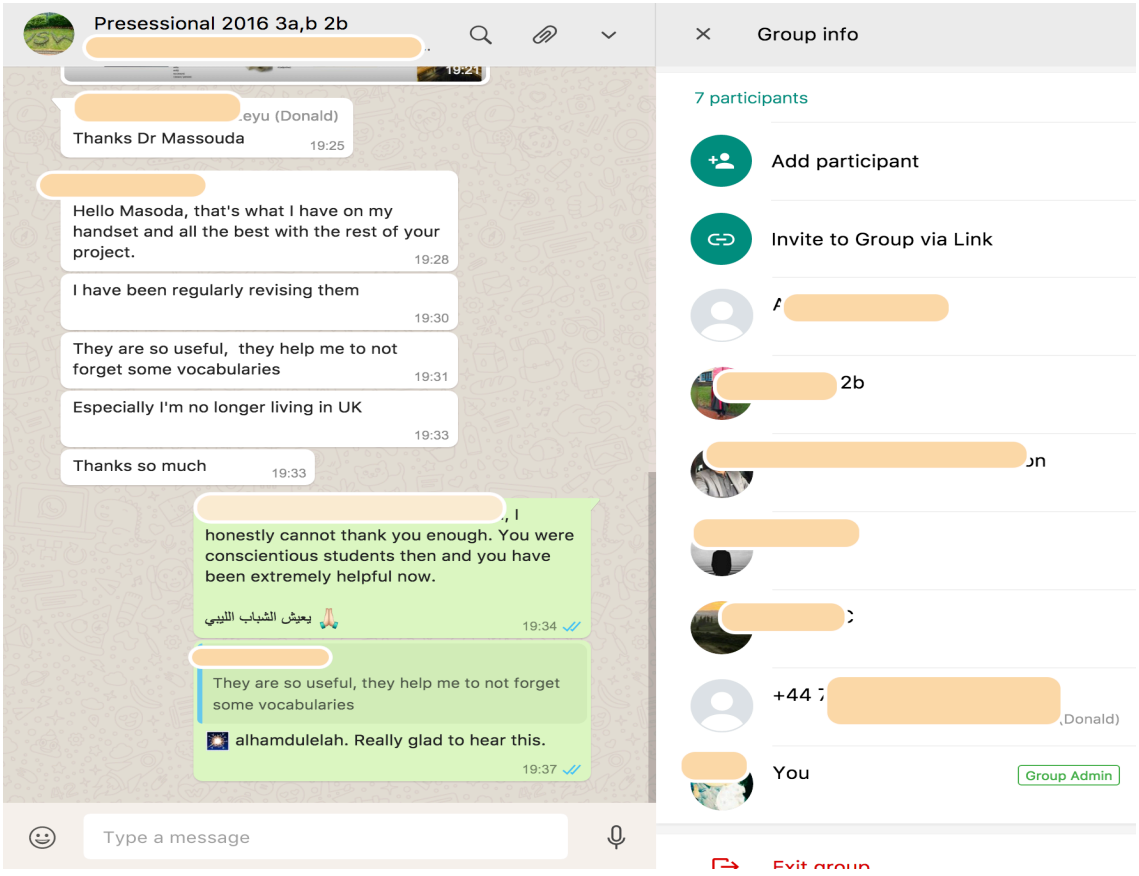
A: Group created on WhatsApp for the Arab Students and on Facebook Messenger for the Chinese Students



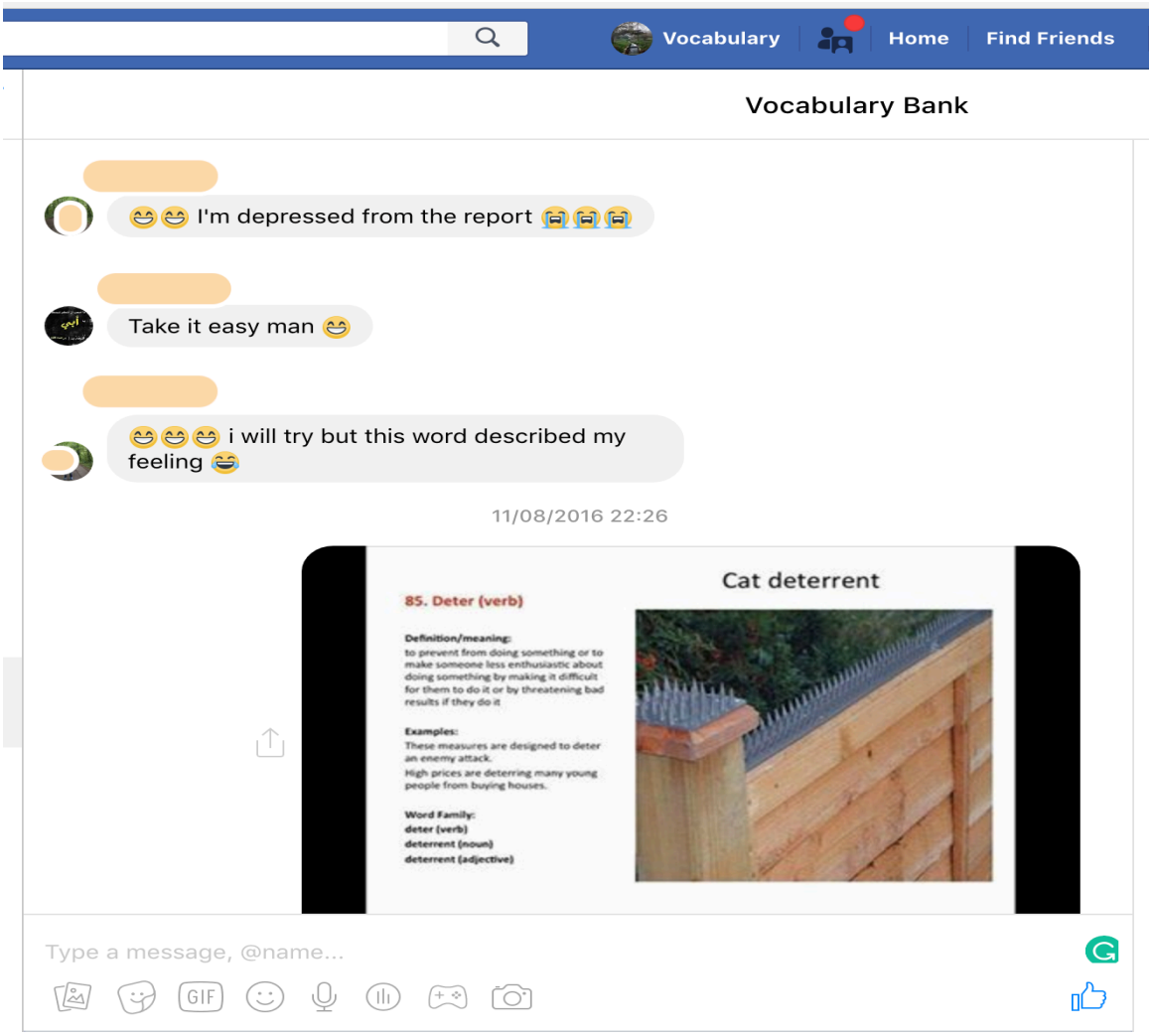
Copy of words sent to the WhatsApp group



B1: Student's satisfaction in Facebook Messenger group

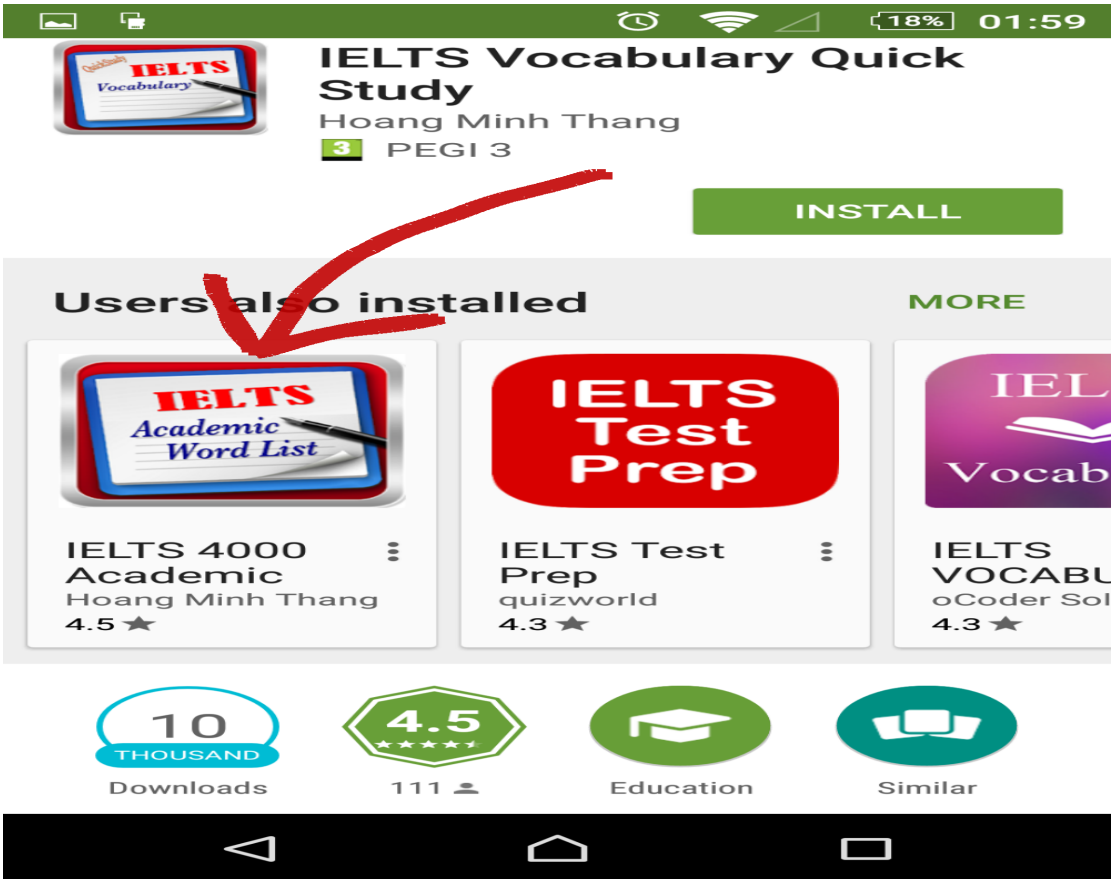


B2: Students' satisfaction in WhatsApp group



C: Private messages sent in Facebook Messenger group

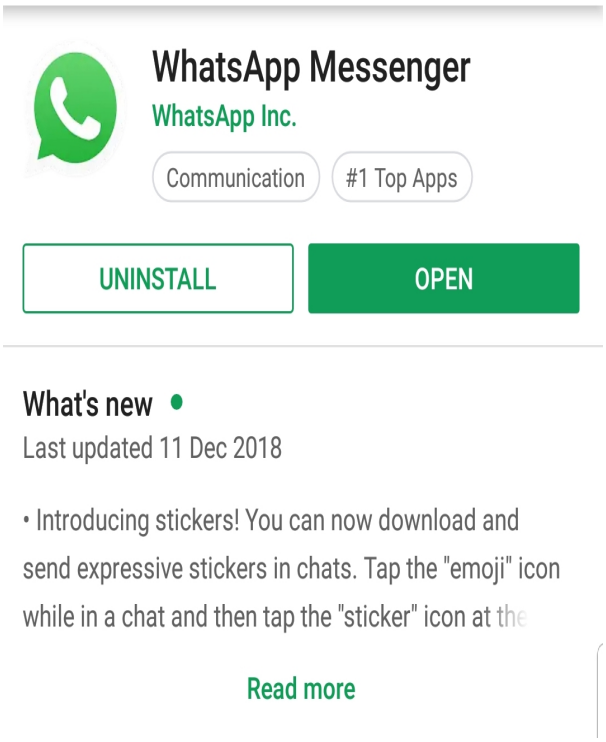
Appendix three: The smartphone app instructed for Stage 1 vocabulary development

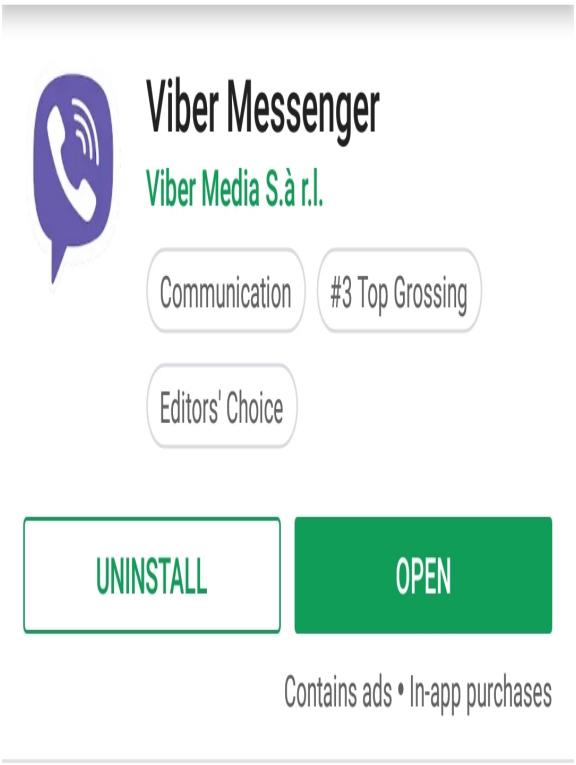


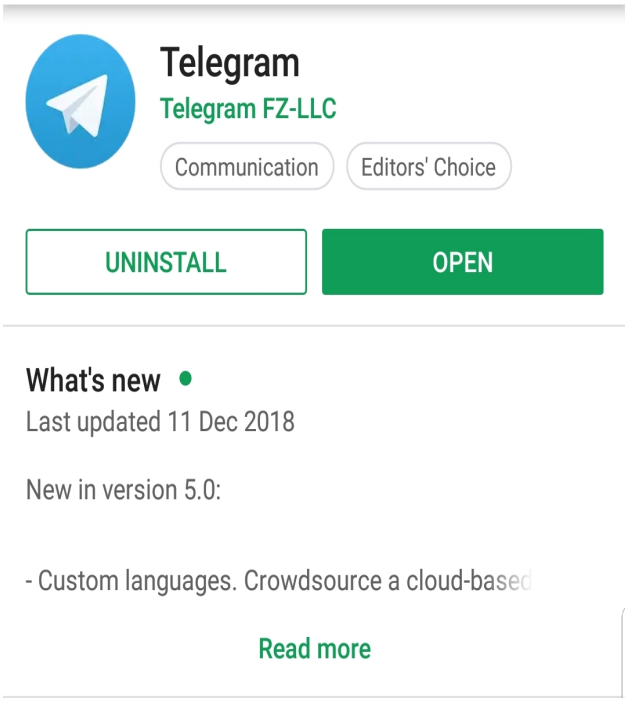
Appendix four: Sample of Stage 1 vocabulary development words (the list)

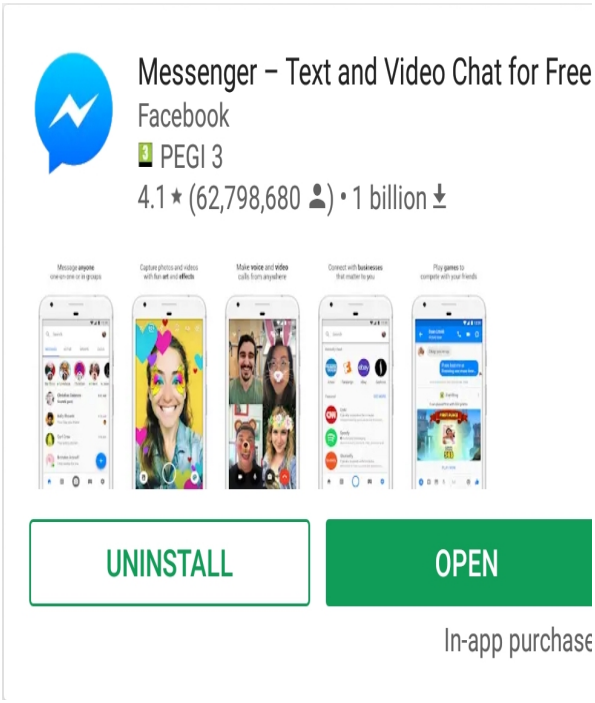
1.	Achieve	69.	Fanatic	137.	Tend
2.	Beloved	70.	Fit	138.	Troublesome
3.	Campus	71.	Formal	139.	Veteran
4.	Credit	72.	Herb	140.	Vow
5.	Deck	73.	Hospitality	141.	Agitate
6.	Erosion	74.	Legal	142.	Astound
7.	Forbid	75.	Popcorn	143.	Bill
8.	Hallmark	76.	Shatter	144.	Clash
9.	Inspire	77.	Sheet	145.	Controversial
10.	Molecular	78.	Snobbish	146.	Dizzy
11.	Monument	79.	Subject	147.	Eager
12.	Overtake	80.	Vanish	148.	Enrolment
13.	Polar	81.	Boast	149.	Equal
14.	Scan	82.	Compute	150.	Keyboard
15.	Scenery	83.	Consent	151.	Limousine
16.	Strive	84.	Cycle	152.	Lively
17.	Superficial	85.	Dominant	153.	Location
18.	Tedious	86.	Exploitation	154.	Luxury
19.	Tower	87.	Farewell	155.	Pier
20.	Trigger	88.	Flare	156.	Pound
21.	Allot	89.	Geology	157.	Prime
22.	Approve	90.	Intimate	158.	Shabby
23.	Billion	91.	Magnitude	159.	Shrewd
24.	Cart	92.	Marshal	160.	Vulnerable
25.	Civil	93.	Oxide	161.	Affectionate
26.	Complicated	94.	Permanent	162.	Agreement
27.	Expenditure	95.	Policy	163.	Aside
28.	Expiration	96.	Reasonable	164.	Behave
29.	Face	97.	Resident	165.	Complimentary
30.	Federal	98.	Shell	166.	Construct
31.	Fussy	99.	Slump	167.	Cosmos
32.	Hardware	100.	Vengeance	168.	Depict
33.	Inhabitant	101.	Animation	169.	Extend
34.	Intent	102.	Accelerate	170.	Eye
35.	Literacy	103.	Accomplishments	171.	Inconvenient
36.	Mobile	104.	Breach	172.	Lodging
37.	Recession	105.	Commander	173.	Ore
38.	Shift	106.	Cubic	174.	Passionate
39.	Submerge	107.	Definitive	175.	Promote
40.	Unload	108.	Dismiss	176.	Scandal
41.	Admittedly	109.	Display	177.	Solely
42.	Canal	110.	Handsome	178.	Stagger
43.	Conservation	111.	Hoe	179.	Statistics
44.	Declaration	112.	Injury	180.	Steward
45.	Decree	113.	Innumerable	181.	Advance
46.	Emancipation	114.	Legend	182.	Basin
47.	Hike	115.	Leisure	183.	Excuse
48.	Immediate	116.	Milestone	184.	Hemisphere
49.	Incline	117.	Negotiation	185.	Kneel
50.	Norm	118.	Overwhelm	186.	Nitrogen
51.	Original	119.	Rough	187.	Nursery
52.	Originate	120.	Sow	188.	Porcelain
53.	Overtime	121.	Analyze	189.	Reciprocal
54.	Precise	122.	Atlas	190.	Representative
55.	Prosperous	123.	Bargain	191.	Robe
56.	Region	124.	Break	192.	Simplify
57.	Shed	125.	Continental	193.	Spectacular
58.	Smuggle	126.	Destruction	194.	Survivor
59.	Thrill	127.	Dreary	195.	Teapot
60.	Vacancy	128.	Exhibition	196.	Tide
61.	Acquire	129.	Flicker	197.	Typhoon
62.	Attentive	130.	Focus	198.	Vapor
63.	Arms	131.	Heave	199.	Variation
64.	Brittle	132.	Homesick	200.	Vein
65.	Clarification	133.	Jeopardize	***Source:***	
66.	Defend	134.	Origin		
67.	Dingy	135.	Resign	***IELTS Academic Word List Android Application (2017)***	
68.	Exciting	136.	Signify		

Appendix five: apps used for Stage 2 vocabulary development (WVTFM)







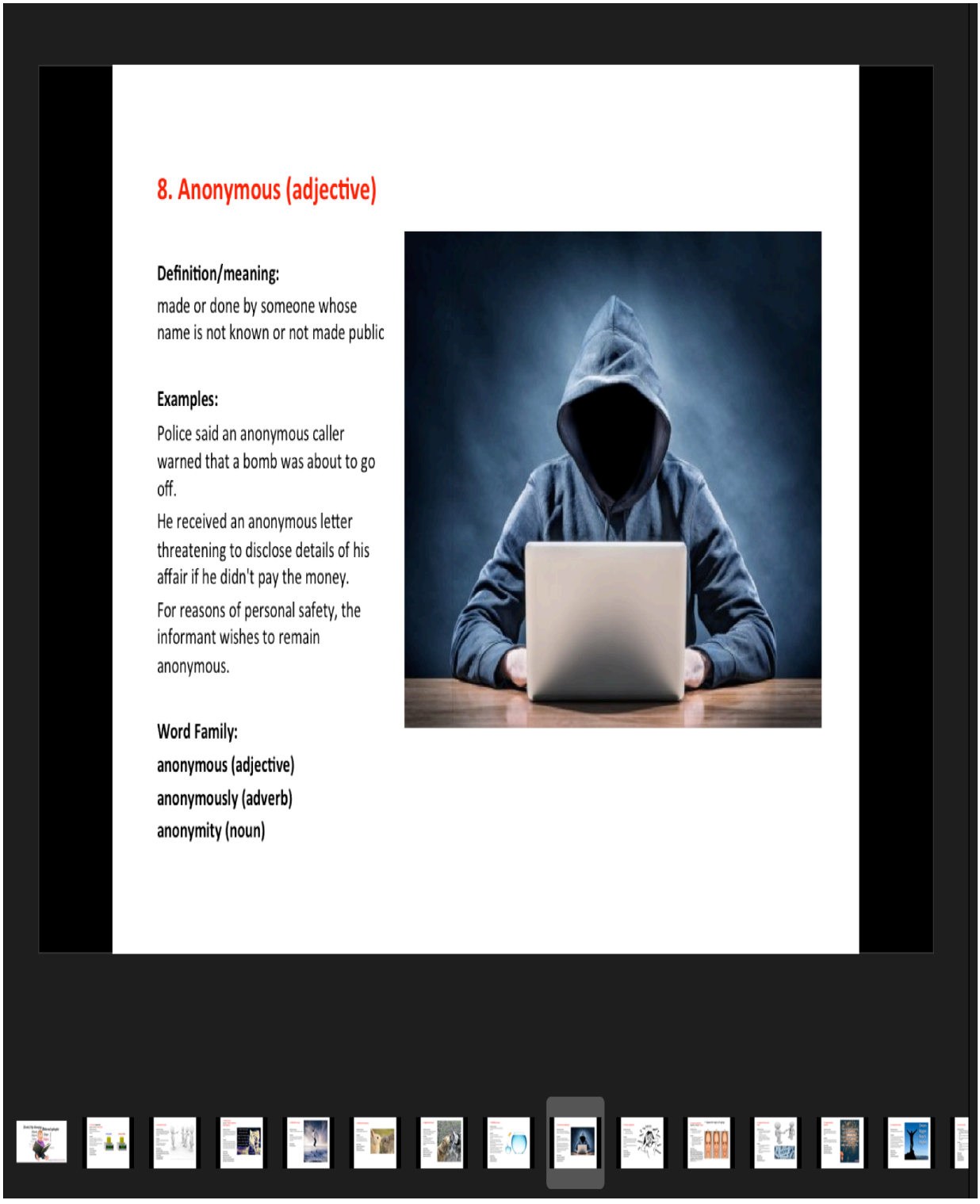


Appendix six: Sample of Stage 2 vocabulary development words (the list)

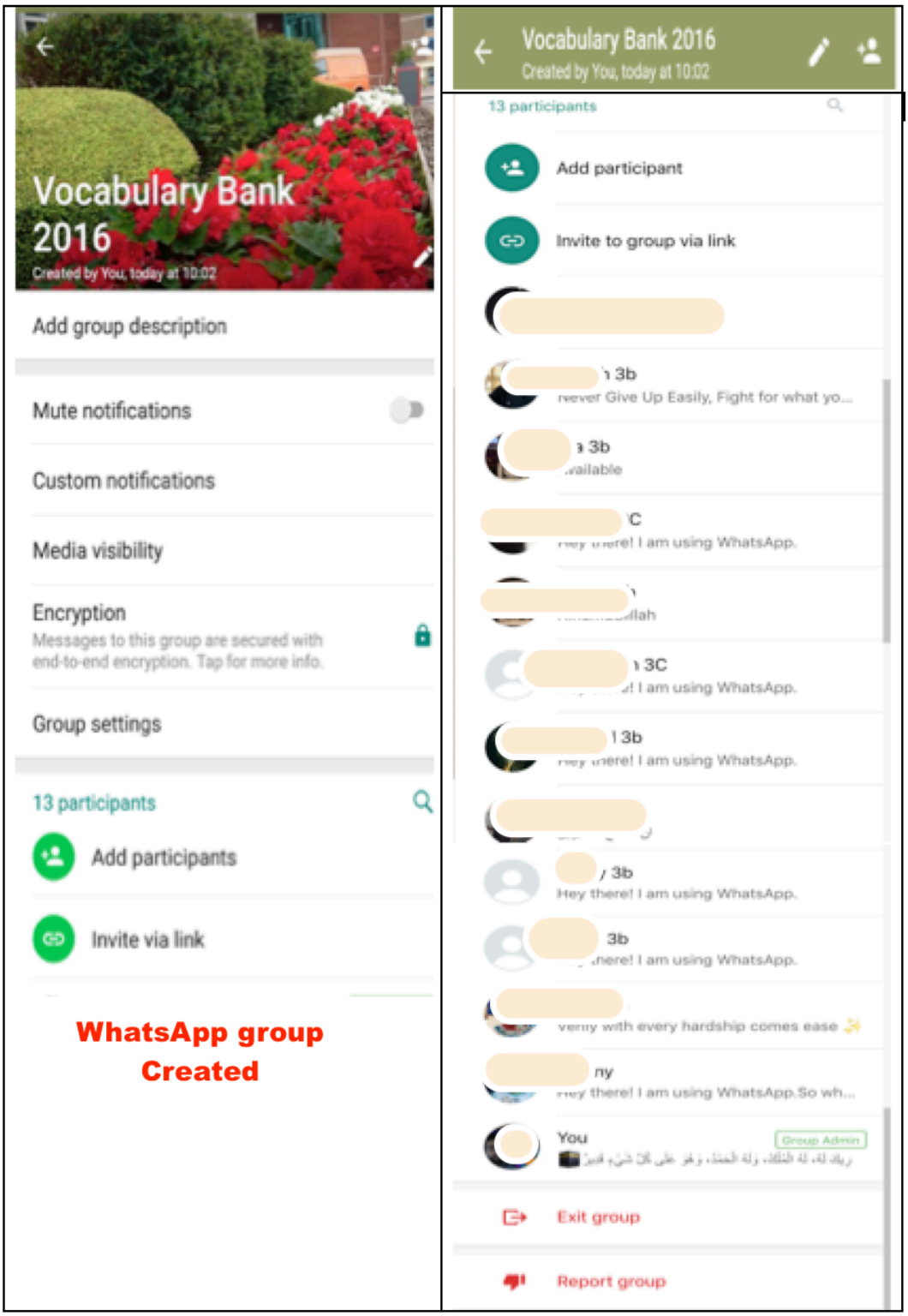
1.	Accurate	69.	Deduction	137.	Intrigued by
2.	Accusation	70.	Deference	138.	Intrinsic
3.	Admire	71.	Defiant	139.	Irritation
4.	Adversity	72.	Deleterious	140.	Manipulate
5.	Affectionate	73.	Deliberately	141.	Modification
6.	Aggression	74.	Demography	142.	Motivation
7.	Ambition	75.	Demystify	143.	Nostalgic
8.	Anonymous	76.	Deplete	144.	Novice
9.	Anxious	77.	Depressed	145.	Obesity
10.	Apparent	78.	Descriptive	146.	Obsessed
11.	Approach	79.	Desertification	147.	Obstacle
12.	Approximately	80.	Determination	148.	Offensive
13.	Aspiration	81.	Deter	149.	Opponent
14.	Assert	82.	Devastating	150.	Optimistic
15.	Astronomy	83.	Dilemma	151.	Outweigh
16.	Attainable	84.	Disastrous	152.	Perceive
17.	Attitude	85.	Discrepancy	153.	Persistence
18.	Authoritarian	86.	Disguise	154.	Precise
19.	Autonomy	87.	Dispute	155.	Prediction
20.	Beckon	88.	Dominant	156.	Preoccupied
21.	Bespoke	89.	Dwell on	157.	Prestigious
22.	Blame	90.	Efficient	158.	Primitive
23.	Bribe	91.	Emphatic	159.	Procedure
24.	Brutal	92.	Enthusiasm	160.	Profound
25.	Burden	93.	Entrepreneur	161.	Proportion
26.	Citation	94.	Equality	162.	Propose
27.	Classification	95.	Error-prone	163.	Pursue
28.	Claustrophobia	96.	Estimate	164.	Quantity
29.	Cognitive	97.	Etiquette	165.	Quotation
30.	Collaboration	98.	Evaluation	166.	Rationale
31.	Commute	99.	Exaggeration	167.	Recognition
32.	Comparative	100.	Excursion	168.	Reconcile
33.	Compensation	101.	Exhausted	169.	Redundant
34.	Compete	102.	Expelled	170.	Relevant
35.	Competence	103.	Expenditure	171.	Reliance
36.	Complex	104.	Extraordinary	172.	Reluctant
37.	Compulsory	105.	Facial expression	173.	Resolution
38.	Concept	106.	Feasible	174.	Risk-averse
39.	Conflict	107.	First impression	175.	Rote learning
40.	Confiscate	108.	Forbidden	176.	Scanning
41.	Confrontational	109.	Frustrating	177.	Scenario
42.	Congestion	110.	Furious	178.	Self-reliant
43.	Conscience	111.	Gossip	179.	Signpost
44.	Conscious	112.	Hesitate	180.	Skimming
45.	Consequences	113.	Hierarchy	181.	Stance
46.	Consecutive	114.	Hilarious	182.	Statistics
47.	Consistency	115.	Hostility	183.	Stipulate
48.	Conspicuous	116.	Humidity	184.	Strategy
49.	Constrain	117.	Hygiene	185.	Strive
50.	Consumption	118.	Imaginative	186.	Studious
51.	Contextualize	119.	Immature	187.	Substantial
52.	Contradictory	120.	Impacts	188.	Suffocate
53.	Contribution	121.	Impediment	189.	Summarize
54.	Controversial	122.	Implement	190.	Superior
55.	Conventional	123.	Inconclusive	191.	Superstition
56.	Convince	124.	Inconsistent	192.	Sympathetic
57.	Counterargument	125.	Indicate	193.	Take the initiative
58.	Counterclaim	126.	Influence	194.	Theoretical
59.	Counterpart	127.	Infrastructure	195.	Thrive
60.	Counterproductive	128.	Ingrained	196.	Unanimous
61.	Courage	129.	Inherit	197.	Underestimate
62.	Courteous	130.	Innovation	198.	Unprecedented
63.	Cross-examine	131.	Insecure	199.	Violence
64.	Cultivate	132.	Inspire	200.	Worst case scenario
65.	Cultural intelligence	133.	Integration/integrity		
66.	Cynical	134.	Intellectual		
67.	Decline	135.	Intervention		
68.	Decisive	136.	Intimidate		

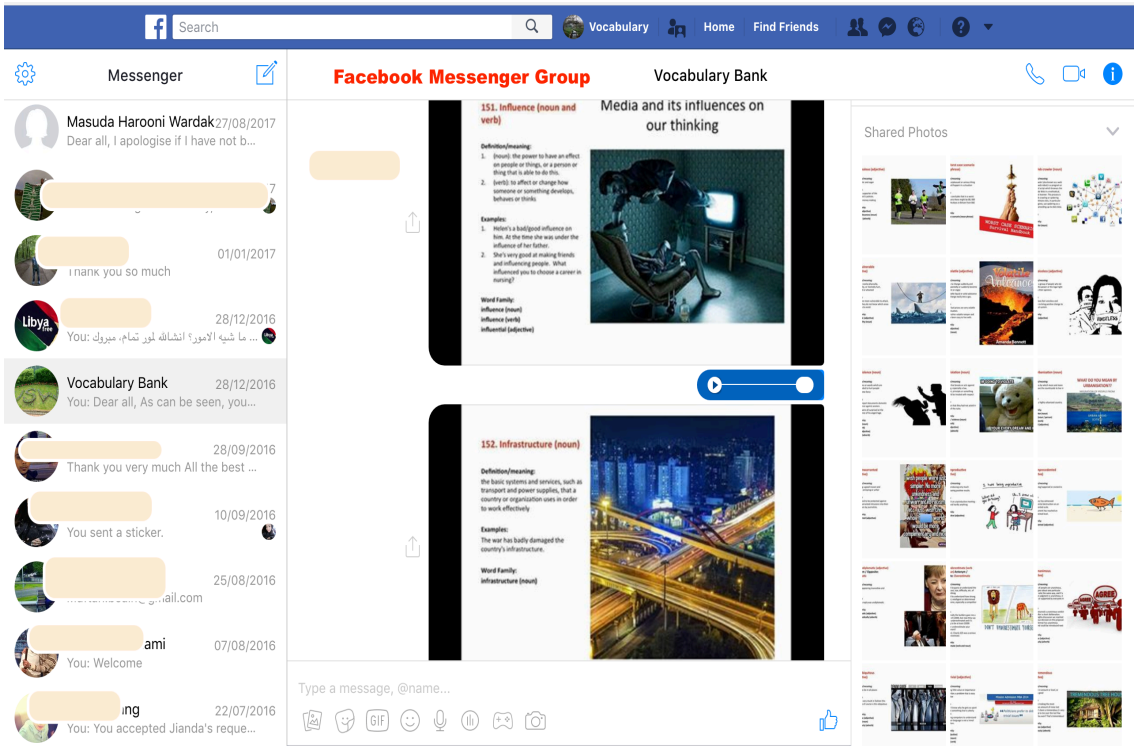
Sources:
New English File (Upper-Intermediate?)
Oxford EAP
Access EAP
Cambridge Advanced Learner's Dictionary
Concise Oxford Thesaurus, Oxford University Press

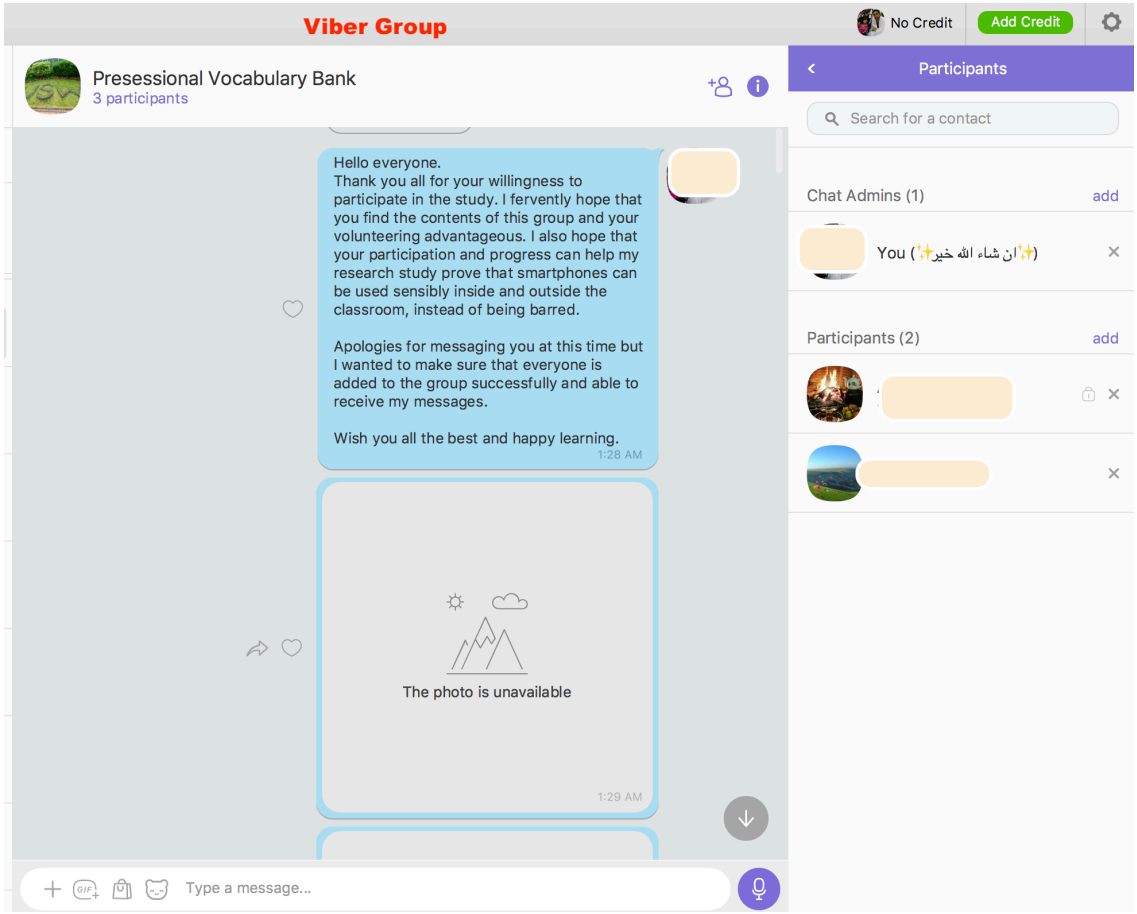
Appendix seven: Sample of Stage 2 vocabulary development words (the slides created)

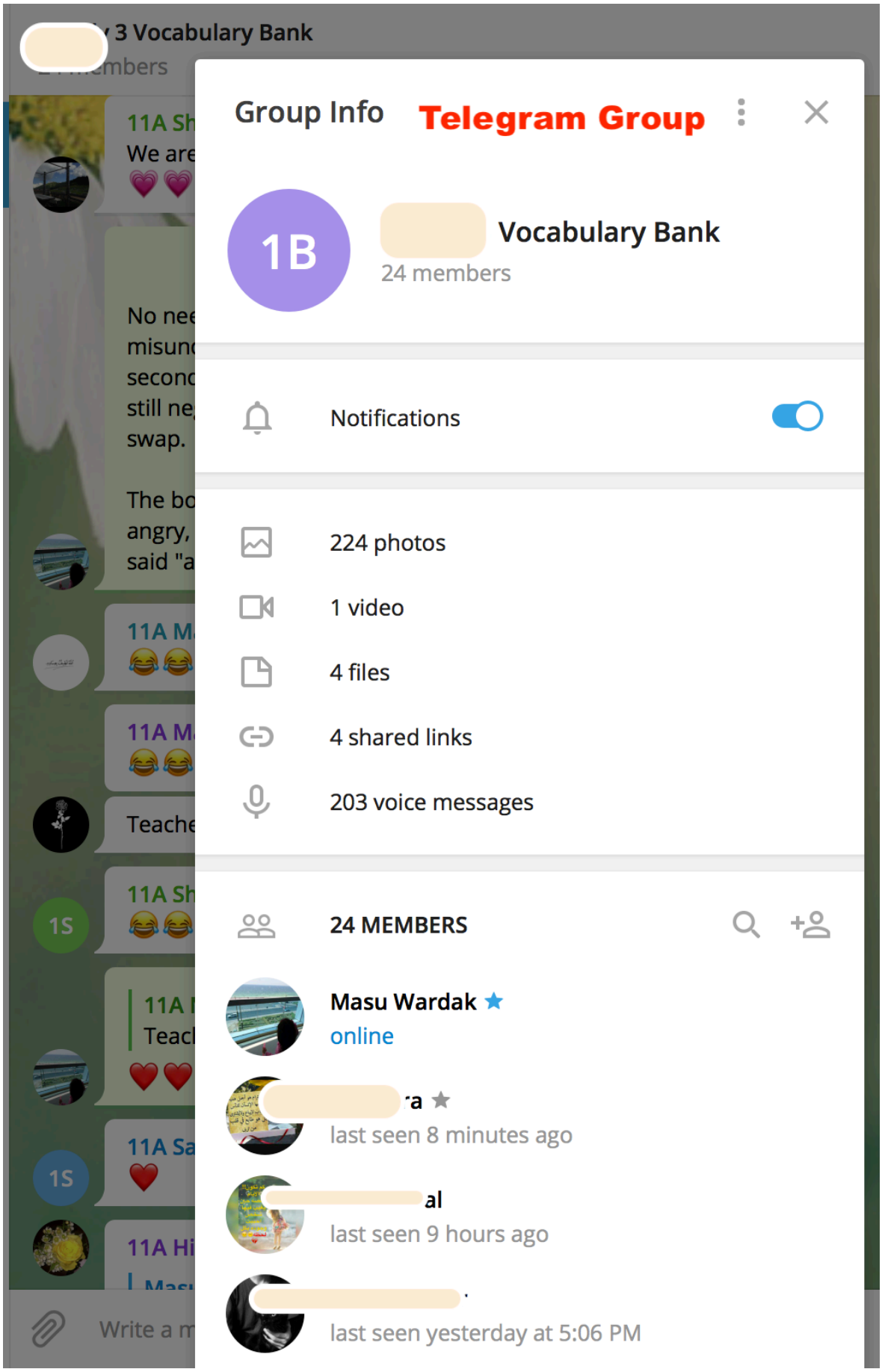


Appendix eight: Screenshots of socialising apps created and participants added for Stage 2 (WVTFM)

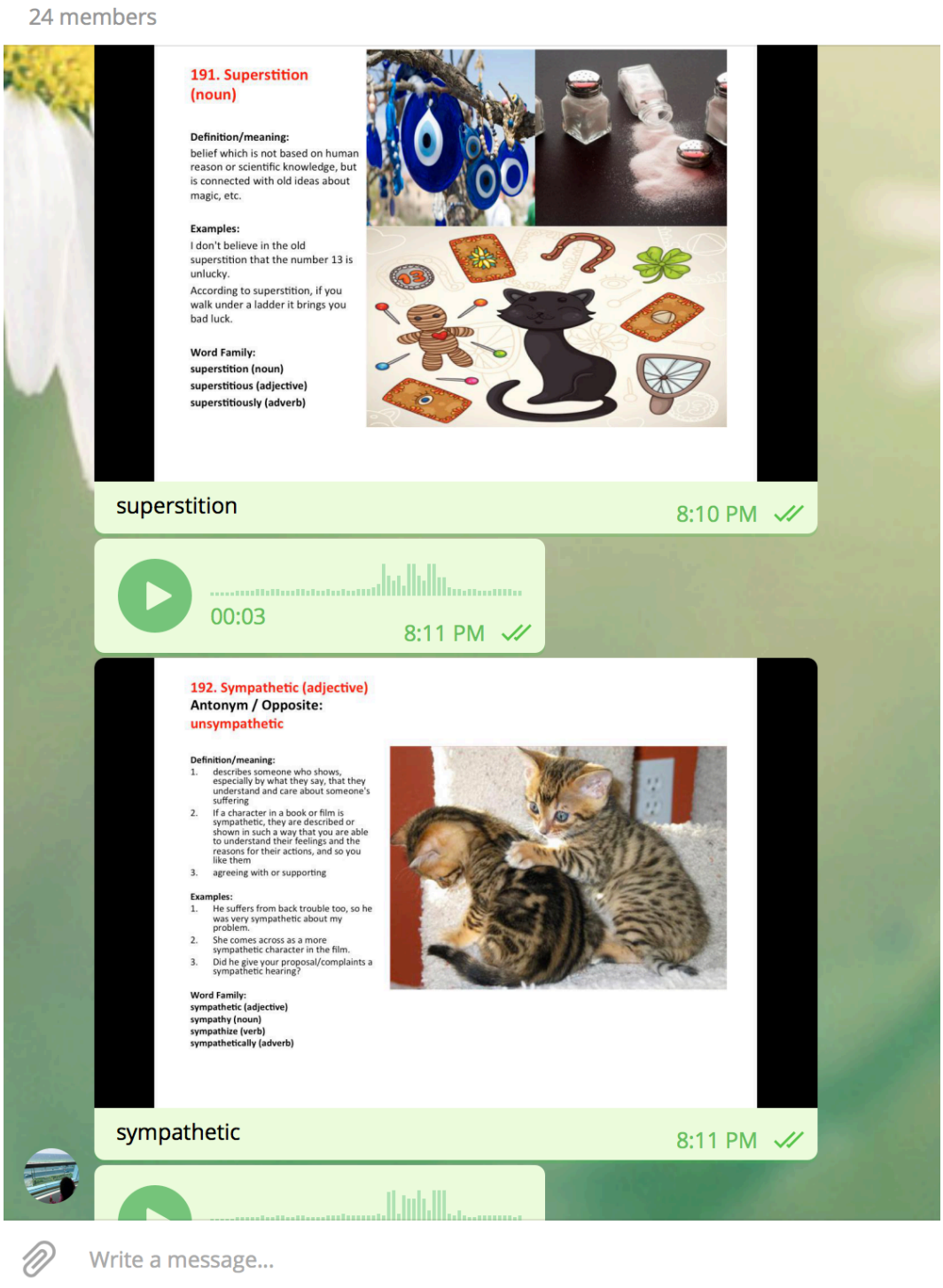


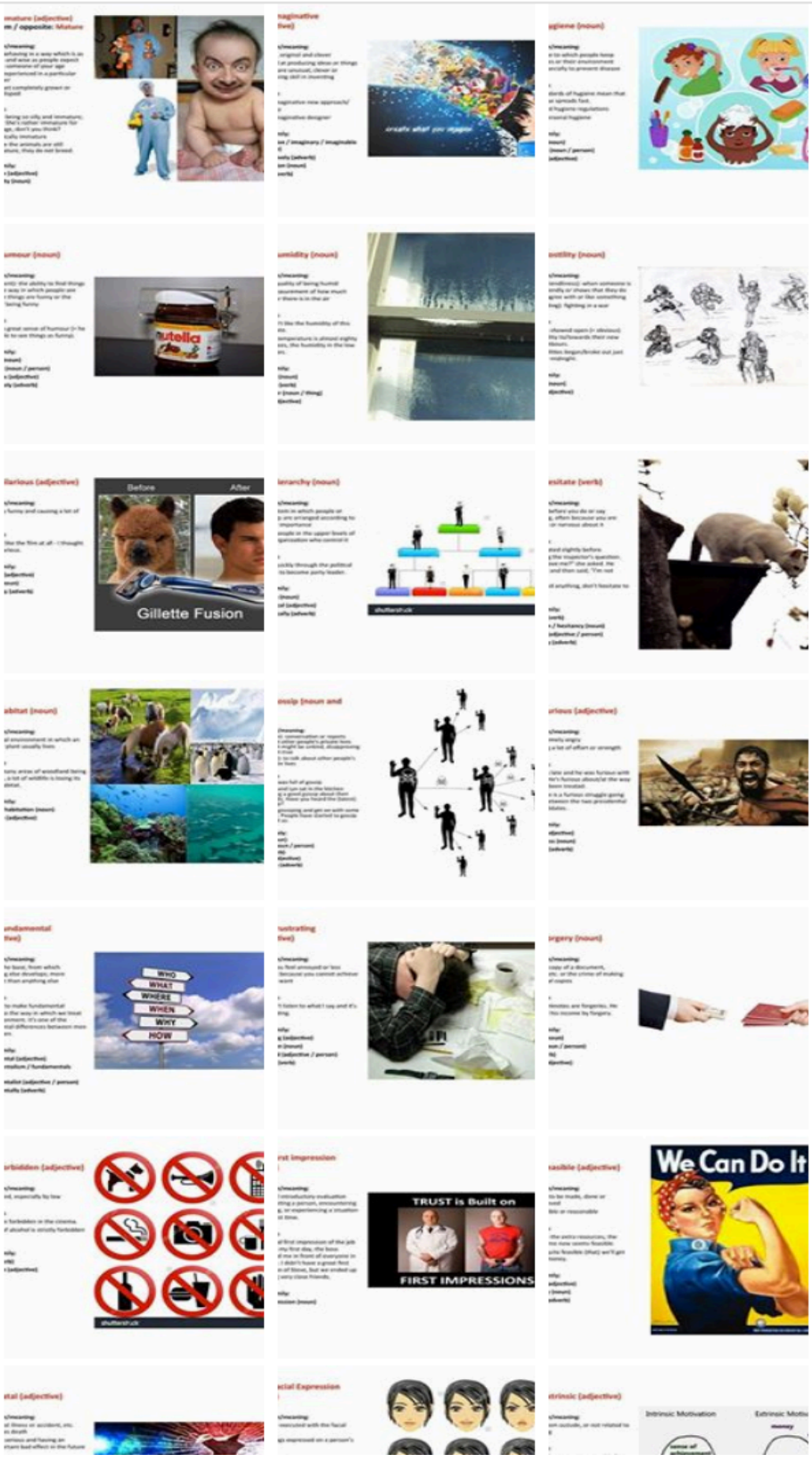

Search
Vocabulary
Home
Find Friends
Messenger
Facebook Messenger Group
Vocabulary Bank
Masuda Harooni Wardak 27/08/2017
Dear all, I apologise if I have not b...
01/01/2017
Thank you so much
28/12/2016
Vocabulary Bank 28/12/2016
You: Dear all, As can be seen, you...
28/09/2016
Thank you very much All the best ...
10/09/2016
You sent a sticker.
25/08/2016
07/08/2016
You: Welcome
22/07/2016
You: You accepted Jianda's reque...
151. Influence (noun and verb)
Media and its influences on our thinking
152. Infrastructure (noun)
Shared Photos
Type a message, @name...


Viber Group
No Credit
Add Credit
Presessional Vocabulary Bank
3 participants
Participants
Search for a contact
Hello everyone.
Thank you all for your willingness to participate in the study. I fervently hope that you find the contents of this group and your volunteering advantageous. I also hope that your participation and progress can help my research study prove that smartphones can be used sensibly inside and outside the classroom, instead of being barred.
Apologies for messaging you at this time but I wanted to make sure that everyone is added to the group successfully and able to receive my messages.
Wish you all the best and happy learning.
1:28 AM
The photo is unavailable
1:29 AM
Chat Admins (1)
add
You (✨ان شاء الله خير✨)
Participants (2)
add
Type a message...


3 Vocabulary Bank
Group Info
Telegram Group
1B
Vocabulary Bank
24 members
Notifications
224 photos
1 video
4 files
4 shared links
203 voice messages
24 MEMBERS
Masu Wardak
online
last seen 8 minutes ago
last seen 9 hours ago
last seen yesterday at 5:06 PM

Appendix nine: Sample of Stage 2 vocabulary development (slides sent daily)




Before
After
Gillette Fusion
WHO
WHAT
WHERE
WHEN
WHY
HOW
TRUST is Built on
FIRST IMPRESSIONS
We Can Do It

Appendix ten: Sample of pre-test and post-test questions (Installed app)

Part 1:

Are the definitions to the words below correct? Tick ☑ the box that applies:

1. Achieve: gain with efforts, accomplish, fulfill
(Yes □ No □ Not sure □)

2. Beloved: street, road or an alley
(Yes □ No □ Not sure □)

3. Campus: field where the buildings of a university are situated
(Yes □ No □ Not sure □)

4. Credit: arrangement for deferred payment for services, available money
(Yes □ No □ Not sure □)

5. Deck: a pack of 52 cards, floor platforms
(Yes □ No □ Not sure □)

6. Erosion: a difficult or unlucky situation or event
(Yes □ No □ Not sure □)

7. Forbid: showing feelings of liking or love
(Yes □ No □ Not sure □)

8. Hallmark: sign, feature, mark including quality or excellence
(Yes □ No □ Not sure □)

9. Inspire: a good friend
(Yes □ No □ Not sure □)

10. Molecular: of molecules, relating to the basic structure or form
(Yes □ No □ Not sure □)

11. Monument: structure erected to commemorate persons or events
(Yes □ No □ Not sure □)

12. Overtake: famous and popular people
(Yes □ No □ Not sure □)

13. Polar: pertaining to one of the poles of the earth
(Yes □ No □ Not sure □)

14. Scan: examine, make a wide and sweeping search of something
(Yes □ No □ Not sure □)

15. Scenery: Feeling unwell
(Yes □ No □ Not sure □)

Part 2:

Choose the correct synonym (similar meaning) (A, B, or C). Tick ☑ the box that applies:

151. Limousine
☐A. distraction ☐B. effect ☐C. a car

152. Lively
☐A. energetic ☐B. government ☐C. policies

153. Location
☐A. place ☐B. confused ☐C. deep-rooted

154. Luxury
☐A. arrange ☐B. indulgence ☐C. breath in

155. Pier
☐A. landing place ☐B. built-in ☐C. outwards

156. Pound
☐A. take up ☐B. weight (16 ounces) ☐C. employ

157. Prime
☐A. first in excellence ☐B. invoke ☐C. remain

158. Shabby
☐A. unconfident ☐B. torn, worn, poor ☐C. locked

159. Shrewd
☐A. clever ☐B. motivate ☐C. spirit

160. Vulnerable
☐A. capable of being wounded ☐B. insect like ☐C. stingy

161. Affectionate
☐A. anonymity ☐B. suspicion ☐C. loving

162. Agreement
☐A. actual ☐B. literal ☐C. state of agreeing

163. Aside
☐A. on, to, one side ☐B. confidence ☐C. strength

164. Behave
☐A. argument ☐B. explanation ☐C. perform in a proper way

165. Complimentary
☐A. Praise and admiration ☐B. procedure ☐C. innovation

166. Construct

Appendix eleven: Sample of pre-test and post-test questions (Socialising apps)

Part 1:

Are the definitions to the words below correct? Tick ☑ the box that applies:

1. Accurate: correct, exact and without any mistakes
(Yes □ No □ Not sure □)

2. Accusation: accepting that something is true or right
(Yes □ No □ Not sure □)

3. Admire: to succeed in finishing something or reaching an aim
(Yes □ No □ Not sure □)

4. Adversity: a difficult or unlucky situation or event
(Yes □ No □ Not sure □)

5. Affectionate: showing feelings of liking or love
(Yes □ No □ Not sure □)

6. Aggression: spoken or physical behaviour which is threatening or involves harm to someone or something
(Yes □ No □ Not sure □)

7. Ambition: a strong wish to be successful, powerful, rich, etc.
(Yes □ No □ Not sure □)

8. Anonymous: famous and popular people
(Yes □ No □ Not sure □)

9. Anxious: worried and nervous
(Yes □ No □ Not sure □)

10. Apparent: interested in doing something
(Yes □ No □ Not sure □)

11. Approach: Feeling unwell
(Yes □ No □ Not sure □)

12. Approximately: close to a particular number or time although not exactly that number or time
(Yes □ No □ Not sure □)

13. Aspiration: the act of taking an aspirin tablet
(Yes □ No □ Not sure □)

14. Assert: assisting and helping others
(Yes □ No □ Not sure □)

15. Astronomy: the scientific study of the universe and of objects which exist naturally in space, such as the moon, the sun, planets and stars

Part 2:

Choose the correct synonym (similar meaning) (A, B, or C). Tick ☑ the box that applies:

126. Influence
☐A. distraction ☐B. effect ☐C. fun

127. Infrastructure
☐A. The basic systems and services ☐B. government ☐C. policies

128. Ingrained
☐A. generous ☐B. confused ☐C. deep-rooted

129. Inherit
☐A. take up ☐B. become heir to ☐C. employ

130. Innovation
☐A. change ☐B. invoke ☐C. remain

131. Insecure
☐A. unconfident ☐B. security deposit ☐C. locked

132. Inspire
☐A. expire ☐B. motivate ☐C. spirit

133. Integration/integrity
☐A. anonymity ☐B. suspicion ☐C. unity

134. Intellectual
☐A. actual ☐B. literal ☐C. mental

135. Intervention
☐A. involvement ☐B. procedure ☐C. innovation

136. Intimidate
☐A. immediate ☐B. frighten ☐C. going on a date

137. Intrigued by
☐A. guided by ☐B. fascinated by ☐C. misled by

138. Intrinsic
☐A. inherent ☐B. intensive ☐C. external

139. Irritation
☐A. rotation ☐B. pleasing ☐C. annoyance

140. Manipulate
☐A. manual ☐B. control ☐C. pollute

Appendix twelve: Sample of the pre project questionnaire (Blank)

Pre-Test Questionnaire

Participant's Name: .....
Preferred application for receiving messages:
WhatsApp □ Viber □ Facebook Messenger □ Do not mind/either will do □
Participant's Mobile Number (For Viber and WhatsApp) : .....
Participants Facebook ID (For Facebook Messenger App): .....
Other preferred App, if any (why?): .....

(Please tick the answer that applies) ☑

1. Male □ Female □
2. Age group: 16-24 □ 25-35□ 36-45□ 46-55□ 56+□
3. Nationality.....

4. Which of the following courses are you currently studying at the university?
Pre-sessional □
Pre-sessional completed and currently on an undergraduate Bachelor course at the university □

Pre-sessional completed and currently on a postgraduate Masters course at the university □
Other □ (please describe).....

5. Which of the following **did you use** for learning the English language **in** your **home country**?
Attended English language classes □
English language textbooks/course books □
Television/films/dramas □
Online language learning websites □ (which websites)..... one-to-one online learning websites □ (which websites)..... face-to-face conversation with other English language speakers □
Other □ (Please describe:.....)

6. Which of the following do you **currently** use for improving your English language?
Attending or have recently attended English language classes □
English language textbooks books/course books □
Television/films/dramas □
Online language learning websites □ (which websites)..... one-to-one online learning websites □ (which websites)..... face-to-face conversation with other English language speakers □
Other □ (Please describe:.....)

7. Which exam did you take in order to get admission to study in Britain?
.....
and what was your exam score: .....
I do not wish to include this information □

8. Do you agree that your English language has improved to a great extent, since you have come to study in Britain?
Strongly agree □ Agree □ Neither agree Nor disagree □
Disagree □ Strongly disagree □

9. If you agree that your English language has improved since you have come to study in Britain, which of the following has assisted and helped you in developing your language?
Pre-sessional/preparatory year programme □
Socializing with native/other English language speakers □
Newspapers/magazines□
Social networking sites (Facebook, Twitter, etc.) □
Making notes and writing down new words on a piece of paper □ Immersion (reading and hearing English everywhere) □
Other □ (Please describe)
.....

10. To what extent do you agree that technology is more helpful when it comes to language learning than traditional approaches, such as textbooks/course books, notebooks, and writing lists?
Strongly agree □ Agree □ Neither agree Nor disagree □
Disagree □ Strongly disagree □

11. If you agree, please briefly describe how technology has helped you with improving your English language?
.....

12. Which of the following in your opinion, is the most helpful and effective for improving your English language (you may choose more than one):
PC Desktop/laptop □ Mobile phones/smartphones □
iPad/Tablet/e-Reader □ iPod/Audio player □
Netbook/Notebook □ Digital pocket dictionary □
Digital dictionaries installed on smartphones □

13. Do you own a smartphone with Internet access?
Yes □ No □ Yes, but no access to the Internet □

14. How often do you use your smartphone?
Every 30 minutes □ Every hour □ Every 2 hours □
2-4 times per day □ Once a day □
Other □ .....

15. Which language do you use, when using your smartphone?
Only English □ Only my first language □ Mainly English and some first language □
Mainly first language and some English □

16. Which of the following apps installed in your smartphone, do you most frequently use?
- Dictionary (Google translator) □
(always □ usually □ sometimes □ rarely □ never □)
- Dictionary (Installed app) □
(always □ usually □ sometimes □ rarely □ never □)
- English Language Learning App □
(always □ usually □ sometimes □ rarely □ never □)
- Facebook □
(always □ usually □ sometimes □ rarely □ never □)
- WhatsApp □
(always □ usually □ sometimes □ rarely □ never □)
- Viber □
(always □ usually □ sometimes □ rarely □ never □)
- Music/Audio Player □
(always □ usually □ sometimes □ rarely □ never □)
- SMS/Text messaging □
(always □ usually □ sometimes □ rarely □ never □)
- Camera □
(always □ usually □ sometimes □ rarely □ never □)
- Other apps □
(Please state the name of the app and how often you use it.....)

17. Do you use any application (app) installed in your smartphone for English language learning? Yes □ No □
If yes, A: which app(s) do you use?.....
B: How often do you open/use this app? .....

18. In your opinion, how important is vocabulary development in English language learning?
Very important □ Somehow important □ Not very important
Not important at all □

19. To what extent are you willing to improve and develop your English language vocabulary?
To a great extent □ To some extent □ Not bothered/not willing □

20. How many new vocabulary items per day would you be able to learn?
2-3 new words □ 4-5 new words □ 6-7 new words □
8+ new words □

Thank you very much for your participation.

Appendix thirteen (A): Sample of post project interview (Blank)

Post-Project Interview Questions

1. What is your opinion of technology use with language learning compared to traditional approaches, such as textbooks/course books, notebooks, and writing lists? Why?
.....
.....

2. What apps on your smartphone did/do you find the most useful and effective for developing your vocabulary (possible answers)
- Vocabulary learning apps / ---
- Google translator / ---
- Viber and WhatsApp / Telegram / other apps / ---
- Facebook / Facebook Messenger / ---
- Installed dictionary / ---

3. Which of the following (non-app) approaches would you consider more effective for vocabulary development? Why?
- Vocabulary games / ---
- Story books / ---
- Sticky notes / ---
- TV Subtitles / ---
- Other /---

.....
.....

4. Which of the following apps did you use for receiving the new words:
Viber □ WhatsApp □ Facebook Messenger □ Telegram □ None □
why?.....

5. If you chose one of the above apps (Viber, WhatsApp, Telegram and Facebook Messenger), how satisfied are you with your vocabulary development via your chosen app and how effective do you consider the app to be?
.....
.....

6. To be more specific, do you think you learned more words from the socializing apps (WhatsApp, Viber, Telegram and Facebook Messenger) or the installed vocabulary development app (IELTS Academic Words List), why?
.....
.....

7. If you did not have to use any of the above apps, how would you have learnt a set of new words? i.e. how do you normally learn?
.....
.....

8. While learning the meaning of the new words, how often did you translate the word into your first language? Why do you think it is important to translate the new words into your first language?
Always □ Quite often □ Sometimes □ Rarely □ Never □
.....
.....

1

9. How many times per day did you read each new word sent via your chosen socializing app?
.....
.....

10. Did you encounter any problems during the learning with the installed or socializing app?
.....
.....

11. Did sending and receiving messages for vocabulary development via your chosen socializing app cost you money? If yes, how much?
.....
.....

12. Would you recommend learning with socializing app to friends in future?
.....
.....

13. What did you most like about learning with socializing app?
.....
.....

14. What did you least like about learning with socializing app?
.....
.....

15. What is your overall opinion about the stage 1 (installed app) vocabulary learning? And why?
- I liked it and it was very helpful
- I liked it but it was not as helpful as the stage two socializing app
- I did not like it as it did not help me learn many new words
- I did not bother opening the app or learning any words
- Any other comments?

.....

16. On a scale of 1-9 (1=least likes and 9 = most liked), which of the following aspects of stage 2 (messaging on socializing apps) did you like the most? Why?
- Images 1, 2, 3, 4, 5, 6, 7, 8, 9
- Definition(s) 1, 2, 3, 4, 5, 6, 7, 8, 9
- Examples 1, 2, 3, 4, 5, 6, 7, 8, 9
- Synonyms/antonyms 1, 2, 3, 4, 5, 6, 7, 8, 9
- Pronunciation 1, 2, 3, 4, 5, 6, 7, 8, 9
- Word family / derivatives 1, 2, 3, 4, 5, 6, 7, 8, 9

.....
.....

17. Would you like to continue developing your English language vocabulary using your chosen socializing app and other similar apps?
.....
.....

Thank you very much. Your cooperation is greatly appreciated.

2

Appendix thirteen (B): Coded Interview Responses

Interview Questions (CAPITALIZED and BOLD)
Responses and Number of Participants (N=?) (Lowercase, Italicized)

Q1:
TRADITIONAL APPROACHES OR TECHNOLOGICAL APPROACHES

Both (N=4)
Technological (N=12)
Traditional (N=4)

Q2:
USEFUL AND EFFECTIVE APP FOR VOCABULARY DEVELOPMENT *(MORE THAN ONE OPTION SELECTED BY PARTICIPANTS)*

Vocabulary learning apps (N=3)
Google translator (N=5)
Socialising apps (N=18)
Installed dictionary (N=4)
None of them (N=1)

Q3:
EFFECTIVE NON APP APPROACHES FOR VOCABULARY DEVELOPMENT *(MORE THAN ONE OPTION SELECTED BY PARTICIPANTS)*

Vocabulary games (N=4)
Story books (N=5)
Sticky notes (N=6)
TV Subtitles (N=11)
Other (N=2)

Q4:
THE APP THAT HELPED YOU IN LEARNING MORE WORDS

Installed AWL (N=3)
Socializing apps (N=17)
Both (N=3)

Q5:
SOCIALIZING APPS USED FOR RECEIVING NEW WORDS *(MORE THAN ONE OPTION SELECTED BY PARTICIPANTS)*

WhatsApp, Telegram or Viber (N=18)
Facebook Messenger (N=12)

Q6:
INDIVIDUAL LEARNING STYLES FOR LEARNING NEW WORDS

Reading with Translation (N=4)
Movies with subtitles (N=3)
Speak with native speakers (N=3)
Using dictionaries in first language (N=2)
Traditional ways, books and notebooks and attending courses (N=3)
I record my voice with new words and listen to it everywhere (N=2)
I teach the new words I learn to my friends
Apply new words to friends and relatives and match with their personality
I don't try much learning anyway

Q7:
TRANSLATION OF NEW WORDS INTO FIRST LANGUAGE

Always (N=15)
Usually/ Sometimes (N=3)
Quite Often (N=2)

Q8:
DEGREE OF SATISFACTION USING THE SOCIALIZING APP

Very Satisfied (N=13)
Satisfied (N=5)
Not very Satisfied(N=2)

Q9:
NUMBER OF DAILY REVISION OF THE NEW WORDS

1-2 times (N=13)
2-3 times (N=4)
3-4 times (N=3)

Q10:
PROBLEMS ENCOUNTERED WITH APPS

No (N=17)
Yes (N=3)

Q11:
ANY COSTS TO COVER DURING LEARNING

No (N=20)
Yes (N=0)

Q12:
RECOMMENDATION OF LEARNING WITH SOCIALIZING APPS IN FUTURE

Yes (N=19)
Maybe (N=1)
No (N=0)

Q13:
MOST LIKED FEATURES IN SOCIALIZING APPS

Images, examples and pronunciation (N=13)
Anytime and anywhere access to phone (N=1)
Number of words to learn daily (N=2)
Easy and didn't cost anything (N=2)
Nothing special (N=2)

Q14:
LEAST LIKED FEATURES IN SOCIALIZING APPS

None/Nothing (N=11)
Joining the group
Taking my free time and forcing me to learn
Disturbing notification tones
Too much to do in pre-sessional course
Phone kept freezing
Distraction (N=2)
Images taking space and memory of phone
Discomfort to my eye

Q15:
OVERALL OPENION OF STAGE 1 INSTALLED APPS

I liked it and it was very helpful (N=3)
I liked it but it was not as helpful as the stage 2 socialising app (N=5)
I did not like it as it did not help me learn many new words (N=5)
I did not bother opening the app or learning any new words (N=5)

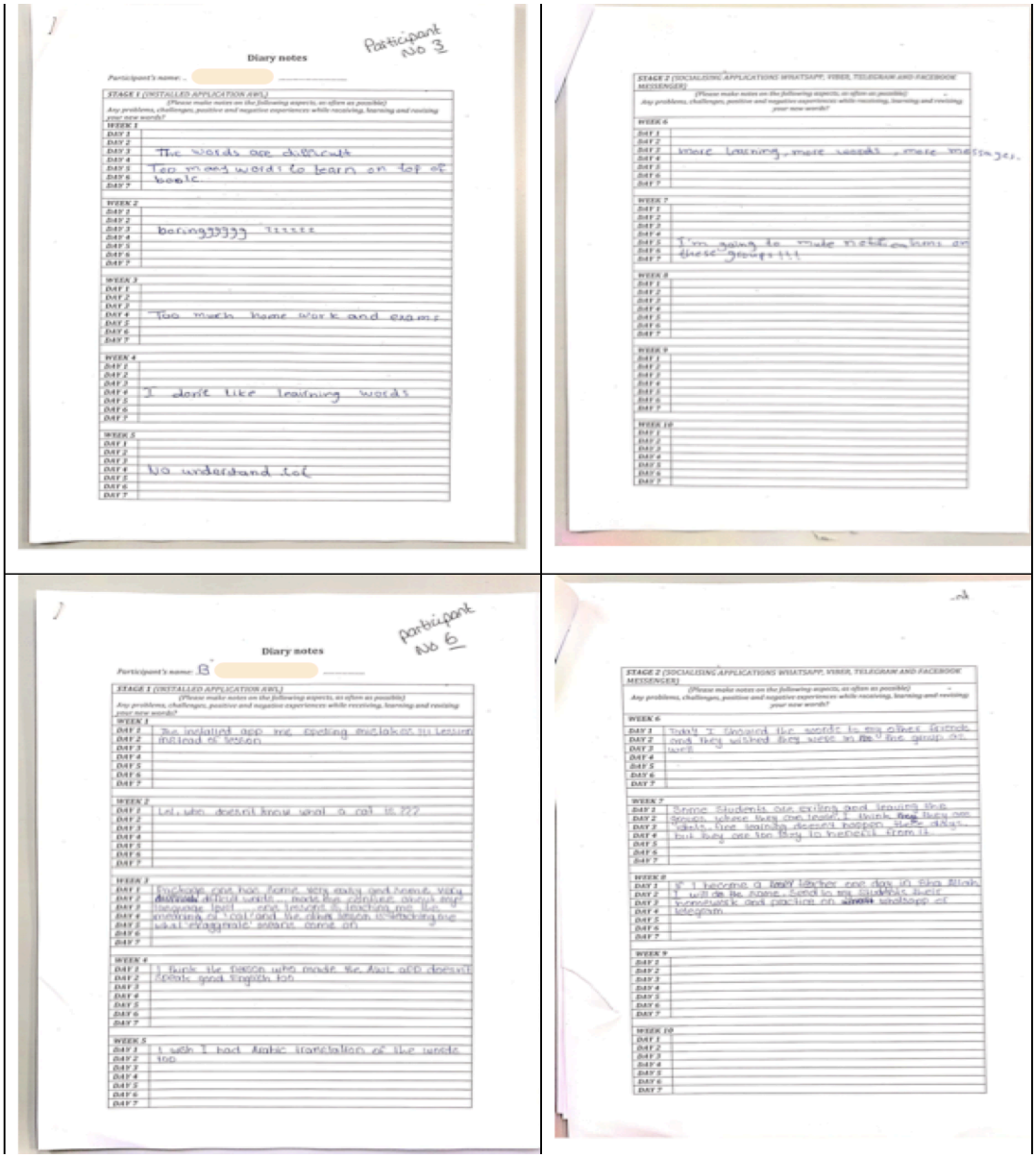
Q16:
LEAST AND MOST LIKED ASPECTS OF STAGE 2 SOCIALIZING APP ON A SCALE OF 1-9 (1 LEAST, 9 MOST)

Images 8 (N=3), 9 (N=17)
Definitions 4 (N=1), 8 (N=6) 9 (N=13)
Examples 4 (N=1), 7 (N=1), 8 (N=4), 9 (N=14)
Synonyms / Antonyms 2 (N=1), 6 (N=1), 7 (N=3), 8 (N=5), 9 (N=10)
Pronunciation 4 (N=1), 7 (N=2), 8 (N=3), 9 (N=14)
Derivatives 1 (N=1), 5 (N=1), 7 (N=1), 8 (N=5), 9 (N=12)

Q17:
Use of socializing apps for learning in future

Yes (N=19)
Maybe (N=1)
No (N=0)

Appendix fourteen: Sample of participants' diary notes



Diary notes

Participant No 3

STAGE 1 (INSTALLED APPLICATION ABIL)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 1

DAY 1

DAY 2

DAY 3 The words are difficult

DAY 4

DAY 5 Too many words to learn on top of basic

DAY 6

DAY 7

WEEK 2

DAY 1

DAY 2

DAY 3 boring9999 zzzzzz

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 3

DAY 1

DAY 2

DAY 3

DAY 4 Too much home work and exams

DAY 5

DAY 6

DAY 7

WEEK 4

DAY 1

DAY 2

DAY 3

DAY 4 I don't like learning words

DAY 5

DAY 6

DAY 7

WEEK 5

DAY 1

DAY 2

DAY 3

DAY 4 No understand tot

DAY 5

DAY 6

DAY 7

STAGE 2 (SOCIALISING APPLICATIONS WHATSAPP, VIBER, TELEGRAM AND FACEBOOK MESSENGER)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 6

DAY 1

DAY 2

DAY 3 more learning, more words, more messages.

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 7

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5 I'm going to make notes on Tems on

DAY 6 these groups !!!

DAY 7

WEEK 8

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 9

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 10

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

Diary notes

Participant No 6

Participant's name: B

STAGE 1 (INSTALLED APPLICATION ABIL)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 1

DAY 1

DAY 2 The installed app me spelling mistakes in Lesson instead of lesson

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 2

DAY 1

DAY 2 Lol, who doesn't know what a cat is ???

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 3

DAY 1 Exchange one hot home very easy and home very

DAY 2 difficult official work made the furniture owns and

DAY 3 computer level one lawyer to teacher me the

DAY 4 morning of cat and he does know is encouraging

DAY 5 what exaggerate extend come on

DAY 6

DAY 7

WEEK 4

DAY 1 I think the person who made the Alat app doesn't

DAY 2 speak good English lol

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 5

DAY 1 I wish I had Arabic translation of the words

DAY 2 too

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

STAGE 2 (SOCIALISING APPLICATIONS WHATSAPP, VIBER, TELEGRAM AND FACEBOOK MESSENGER)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 6

DAY 1 Didn't I invaid the words to my other friends

DAY 2 and they wished they were in the five group as

DAY 3 well

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 7

DAY 1 Some students are exiting and leaving the

DAY 2 group, where they can learn I think the busy one

DAY 3 starts, the learning doesn't happen that much

DAY 4 but they are too busy to respect from it

DAY 5

DAY 6

DAY 7

WEEK 8

DAY 1 If I become a busy teacher one day in Shaa Allah

DAY 2 I will be more patient to my students there

DAY 3 homework and practice on whatsapp, or

DAY 4 telegram

DAY 5

DAY 6

DAY 7

WEEK 9

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 10

DAY 1

DAY 2

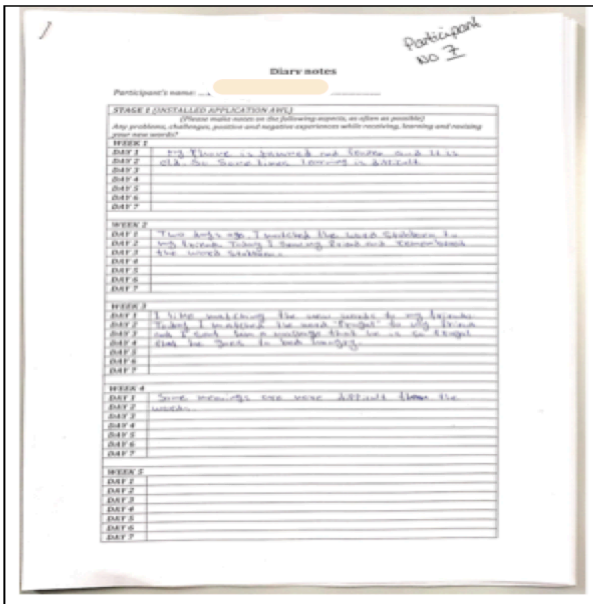
DAY 3

DAY 4

DAY 5

DAY 6

DAY 7



Participant NO 7

Diary notes

Participant's name: ...

STAGE 1 (INSTALLED APPLICATION ONLY)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 1

DAY 1 My iPhone is damaged and broke and it is old. So, Some times, I borrow my brother

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 2

DAY 1 Two days ago, I switched the word Celebrate to

DAY 2 My friend. Today I learned Read and Remember

DAY 3 the word Sadness.

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 3

DAY 1 I like watching the new words to my friends.

DAY 2 Today learned the word Forget in my brain

DAY 3 and I can't use a language that he is in English

DAY 4 and he Speak in his country.

DAY 5

DAY 6

DAY 7

WEEK 4

DAY 1 Some meanings are very difficult from the words.

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 5

DAY 2

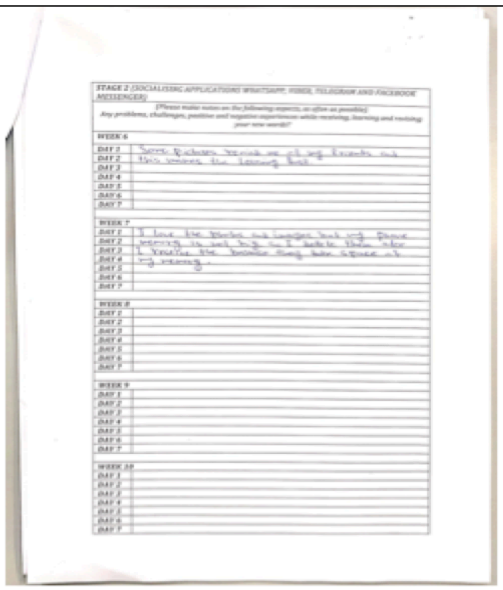
DAY 3

DAY 4

DAY 5

DAY 6

DAY 7



STAGE 2 (SOCIALISING APPLICATIONS WHATSAPP, VIBER, TELEGRAM AND FACEBOOK MESSENGER)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 6

DAY 2 Some Pictures remind me of my Parents and

DAY 2 they helped the learning Book

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 7

DAY 1 I love the Words and Language but my Phone

DAY 2 learning is not help me I have to Delete other

DAY 3 I, Create the Language Many take a Space in

DAY 4 My memory.

DAY 5

DAY 6

DAY 7

WEEK 8

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 9

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 10

DAY 1

DAY 2

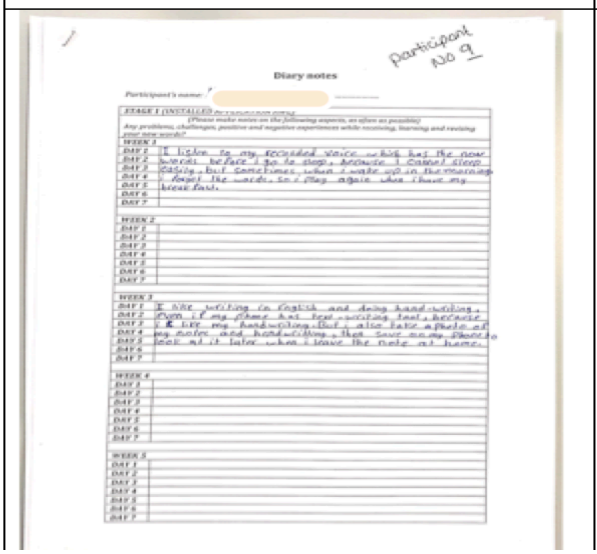
DAY 3

DAY 4

DAY 5

DAY 6

DAY 7



Participant NO 9

Diary notes

Participant's name: ...

STAGE 1 (INSTALLED APPLICATION ONLY)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 1

DAY 2 I listen to my recorded voice, which has the new

DAY 2 words before I go to sleep, because I cannot sleep

DAY 3 easily, but sometimes, when I wake up in the morning

DAY 4 I forget the words, so I play again like I have my

DAY 5 lesson back.

DAY 6

DAY 7

WEEK 2

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 3

DAY 1 I like writing in English and doing hand-writing.

DAY 2 Even if my phone has text-writing tool, because

DAY 3 I like my hand-writing. But, also take a photo of

DAY 4 my notes and hand-writing, that save on my phone so

DAY 5 that at later when I leave the note at home.

DAY 6

DAY 7

WEEK 4

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 5

DAY 1

DAY 2

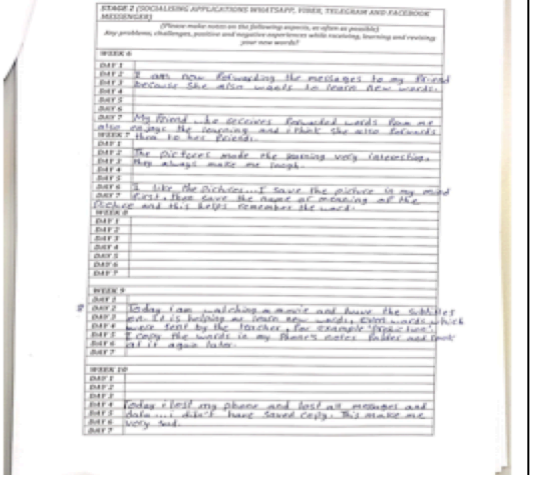
DAY 3

DAY 4

DAY 5

DAY 6

DAY 7



STAGE 2 (SOCIALISING APPLICATIONS WHATSAPP, VIBER, TELEGRAM AND FACEBOOK MESSENGER)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 6

DAY 1

DAY 2 I am now Forwarding the messages to my friend

DAY 2 because she also wants to learn new words.

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7 My friend she receives forwarded words from me

WEEK 7 also as per the language and I think she also forwards

DAY 1 them to her friends.

DAY 2

DAY 2 The pictures made the learning very interesting.

DAY 3 They always make me laugh.

DAY 4

DAY 5

DAY 6 I like the pictures... I save the picture in my mind

DAY 7 first, then save the image or meaning of the

WEEK 8 picture and this helps remember the words.

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 9

DAY 1

DAY 2 Today I am watching a movie and have the subtitles

DAY 3 on. It is helping me learn new words, even words which

DAY 4 were text by the teacher, for example 'Spacious'.

DAY 5 I copy the words in my Notes folder and look

DAY 6 at it again later.

DAY 7

WEEK 10

DAY 1

DAY 2

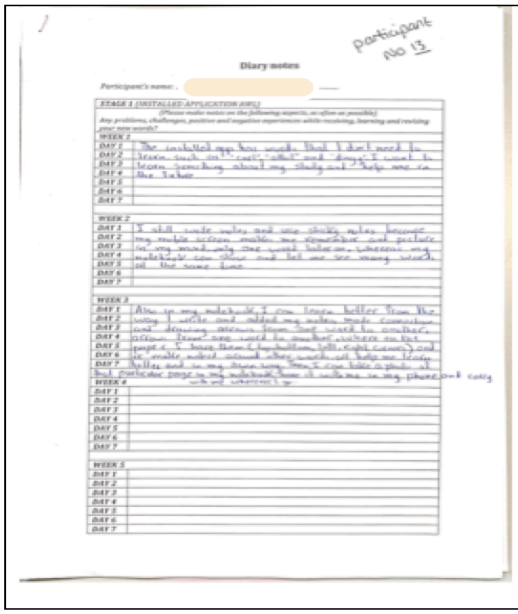
DAY 3

DAY 4 Today I lost my phone and lost all messages and

DAY 5 data... I didn't have saved copy. This make me

DAY 6 very sad.

DAY 7



Participant NO 13

Diary notes

Participant's name: ...

STAGE 1 (INSTALLED APPLICATION ONLY)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 1

DAY 1 The installed app how much that I don't need to

DAY 2 learn such as "well" "also" and things I want to

DAY 3 learn something about my study and help me in

DAY 4 the future

DAY 5

DAY 6

DAY 7

WEEK 2

DAY 1 I still write notes and use sticky notes because

DAY 2 my mobile screen makes me sometimes and getting

DAY 3 to my mood only one, I used before, mean my

DAY 4 mobile's can allow and tell me see many words

DAY 5 at the same time

DAY 6

DAY 7

WEEK 3

DAY 1 Also in my notebook I can learn better from the

DAY 2 way I write and about my notes main examples

DAY 3 and drawing diagrams from that used to another,

DAY 4 often times one used to another where in the

DAY 5 paper I have them (headlines, left right corners) and

DAY 6 in middle related others words all help me learn

DAY 7 better and in my phone long time I can take a photo of

but particular page in my notebook, then it will be in my phone and copy with my computer's as

WEEK 4

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 5

DAY 1

DAY 2

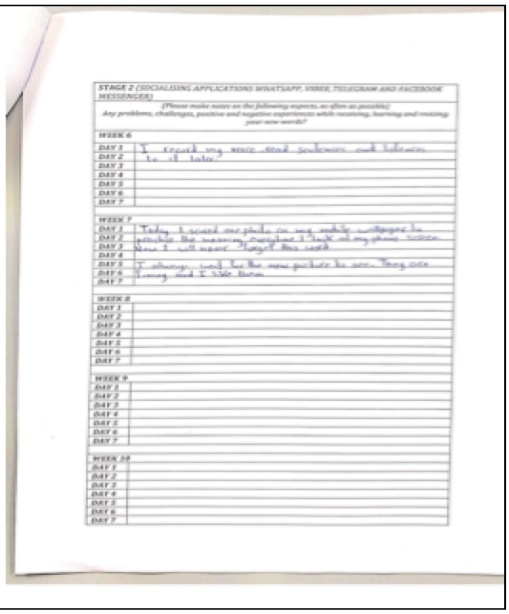
DAY 3

DAY 4

DAY 5

DAY 6

DAY 7



STAGE 2 (SOCIALISING APPLICATIONS WHATSAPP, VIBER, TELEGRAM AND FACEBOOK MESSENGER)

(Please make notes on the following aspects, as often as possible)

Any problems, challenges, positive and negative experiences while receiving, learning and revising your new words?

WEEK 6

DAY 1

DAY 2 I record my voice and sentences and listen

DAY 2 to it later.

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 7

DAY 1 Today I saved one photo on my mobile wallpaper to

DAY 2 remember the meaning and how I took it on my phone screen.

DAY 3 Now I will learn things new words.

DAY 4

DAY 5 I always wait for the new picture to see. They are

DAY 6 funny and I also learn.

DAY 7

WEEK 8

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 9

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

WEEK 10

DAY 1

DAY 2

DAY 3

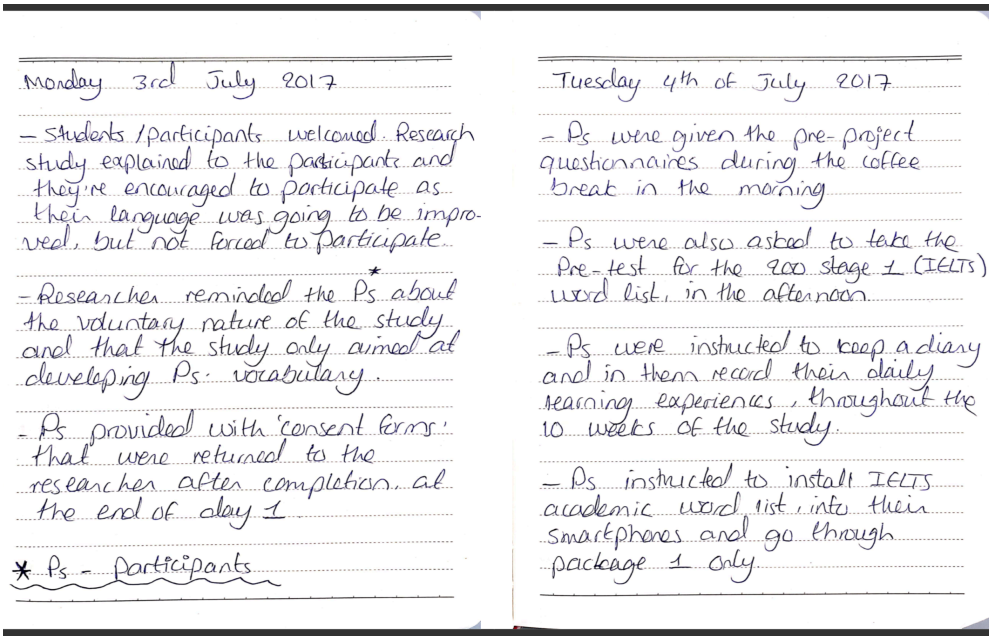
DAY 4

DAY 5

DAY 6

DAY 7

Appendix 15: Sample of researcher's log



Monday 3rd July 2017

- Students / participants welcomed. Research study explained to the participants and they're encouraged to participate as their language was going to be improved, but not forced to participate.

- Researcher reminded the Ps* about the voluntary nature of the study and that the study only aimed at developing Ps' vocabulary.

- Ps provided with 'consent forms' that were returned to the researcher after completion, at the end of day 1

* Ps - participants

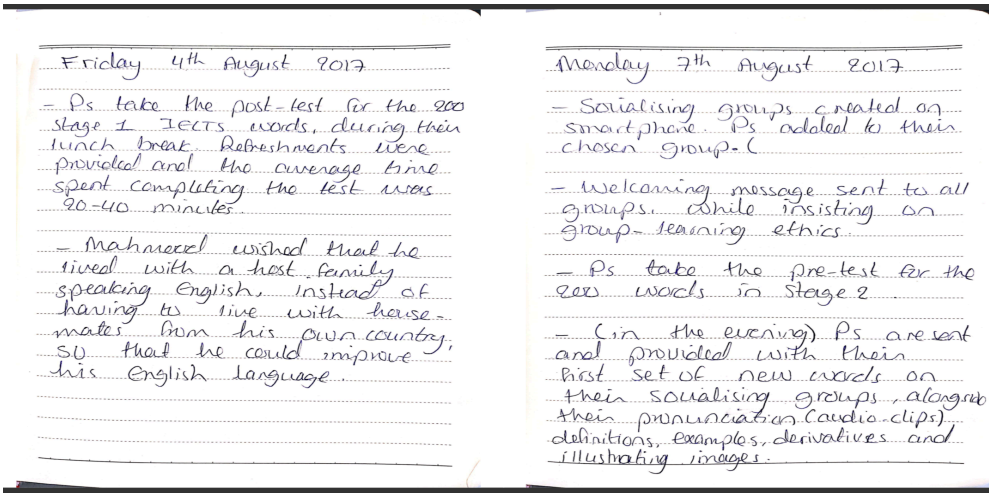
Tuesday 4th of July 2017

- Ps were given the pre-project questionnaires during the coffee break in the morning

- Ps were also asked to take the Pre-test for the 200 stage 1 (IELTS) word list, in the afternoon.

- Ps were instructed to keep a diary and in them record their daily learning experiences, throughout the 10 weeks of the study.

- Ps instructed to install IELTS academic word list, into their smartphones and go through package 1 only.



Friday 4th August 2017

- Ps take the post-test for the 200 stage 1 IELTS words, during their lunch break. Refreshments were provided and the average time spent completing the test was 20-40 minutes.

- Mahmood wished that he lived with a host family speaking English, instead of having to live with house-mates from his own country, so that he could improve his English language.

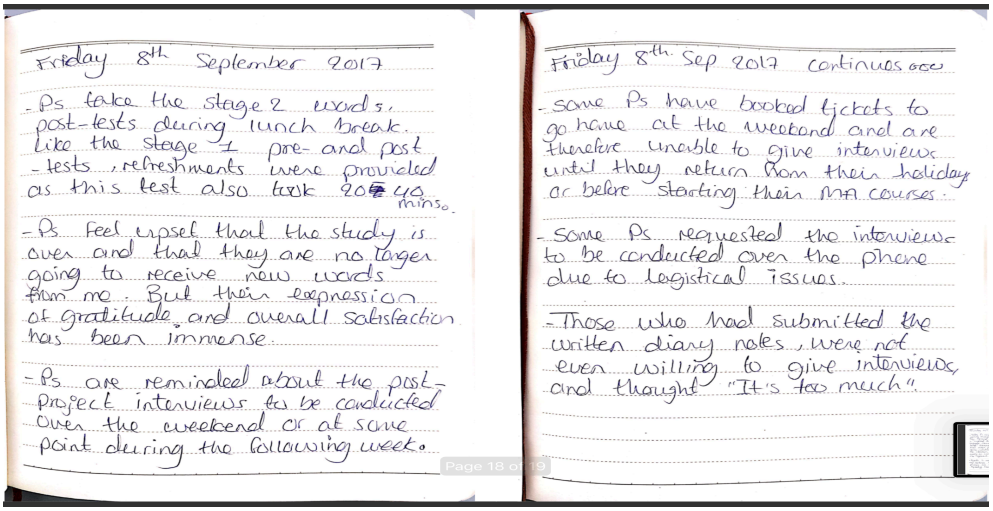
Monday 7th August 2017

- Socialising groups created on smartphone. Ps added to their chosen group-(

- Welcoming message sent to all groups, while insisting on group-learning ethics.

- Ps take the pre-test for the 200 words in Stage 2.

- (in the evening) Ps are sent and provided with their first set of new words on their socialising groups, alongside their pronunciation (audio-clips) definitions, examples, derivatives and illustrating images.



Friday 8th September 2017

- Ps take the stage 2 words, post-tests during lunch break, like the stage 1 pre- and post-tests, refreshments were provided as this test also took 20-40 mins.

- Ps feel upset that the study is over and that they are no longer going to receive new words from me. But their expression of gratitude and overall satisfaction has been immense.

- Ps are reminded about the post-project interviews to be conducted over the weekend or at some point during the following week.

Friday 8th Sep 2017 continues ...

- some Ps have booked tickets to go home at the weekend and are therefore unable to give interviews until they return from their holiday or before starting their MA courses.

- some Ps requested the interviews to be conducted over the phone due to logistical issues.

- Those who had submitted the written diary notes, were not even willing to give interviews and thought "It's too much".

Appendix sixteen: Sample transcripts of interviews (using DeScript)

Participant number 1

Interviewer: First post-project interview question participant number one. okay, first question, what is your opinion of Technology use with language learning compared to traditional approaches such as textbooks course books notebooks and writing lists and why?

P1: we are in advanced country so most people use technology and the Teenagers and our children's, They found the technology especially because they spend more time on it than the books and the other stuff will be.

Interviewer: That's right Okay, thank you. And what apps on your smartphone did you find the most useful and effective for your development for your vocabulary development? For example, Google translator vocabulary learning apps, Socializing apps?

P1: Google and Telegram and install dictionary.

Interviewer: Okay. Thank you. Which of the following non-up approaches Would you consider more effective for vocabulary development and why vocabulary games, storybooks, sticky notes, and TV subtitles or anything else?

P1: storybooks and sticky notes OK.

Interviewer: Okay. So which app socializing app did you use for receiving the words?

P1: Telegram

Interviewer: telegram, is there any specific reason why you chose it?

P1: Because we can connect with the teacher and the student. So it will be exciting to learn with them

Interviewer: That's right. Okay, so to be more specific, do you think you learned more words from the socializing app Telegram or the install vocabulary app IELTS academic word list?

P1: both of them. But telegram it was more helpful because there you'll was teaching us words that I'd never seen before. So now I know a lot of words from your Telegram.

Interviewer: That's right. Okay, and if you did not have to use any of the above apps, how would you learn how would you have learned a set of new words or how do you normally learn?

P1: Yeah, we got to the I go to the library and read books because I love reading and I can connect with people who know English and other people to let me practice in English.

Interviewer: Okay, so needing practice with people as well as reading thank you while learning the meaning of the new words. How often did you translate the words into your first language? And why do you think it's important to translate the words into your first language?

P1: sometimes because that other words I, I get the clear in the clear idea and that they're so specific. So it's better

Interviewer: So you think your first language is giving you the specific meaning?

P1: Yeah

Interviewer: Okay. Thank you. If you choose one of the apps above or if you choose telegram for example, how satisfied are you with your vocabulary development by Telegram and how effective do you think or consider the app to be?

P1: I think I thought the the telegram any technology. It's better because all the time I spent it on my phone. So if there's something on my phone, I will say it directly so it will be more useful.

Interviewer: That's right. Thank you. And how many times per day would you say that you read each New Word by your chosen app?

P1: every day one time

Interviewer: one time, Yes. OK thank you. And did you encounter any problems during the learning?

P1: Yeah, because my Phone got stuck sometimes so.

Interviewer: yeah It's kind of, it's frozen because sometimes okay the next question, did sending and receiving messages for vocabulary development via telegram cost you any money.

P1: No, it was free.

Interviewer: It was free thank you. Would you recommend this learning approach or learning with telegram to friends in future?

P1: Yes, because it's so useful and helpful.

Interviewer: And what did you most like about telegram app?

P1: I learned with telegram app more words because I always open Telegram so I can see the words So...

Interviewer: that's true. Okay, and what would you say you least liked about Telegram?

P1: The damage in my phone because the telegram is jammed in my phone. So sometimes gets stuck damage.

Interviewer: Yeah, it could get jammed and freeze as well, yeah, that's true. So, what would you say is your overall opinion about stage one installed app vocabulary learning and why?

P1: I liked it, but it was a not as helpful as the stage two socializing app and I did not bother opening the app or learning any words.

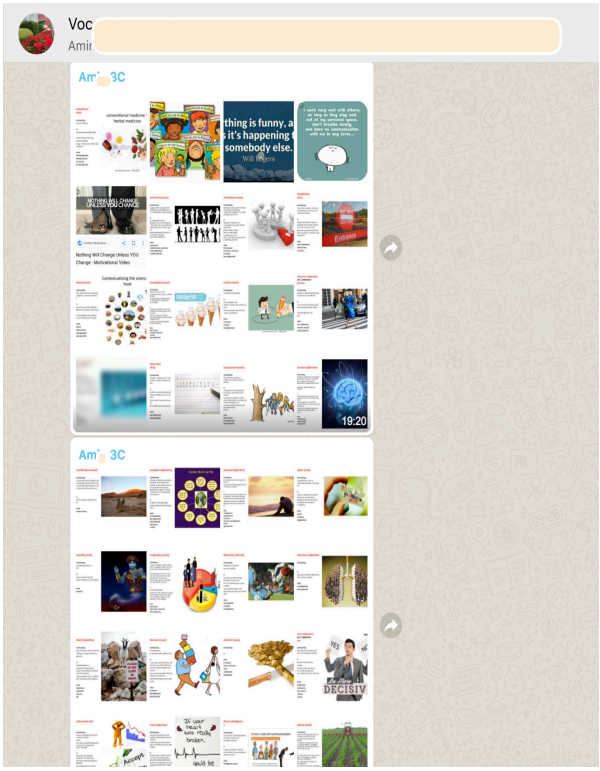
Interviewer: Okay, what do you think? Why do you think you didn't really bother opening the app was it?

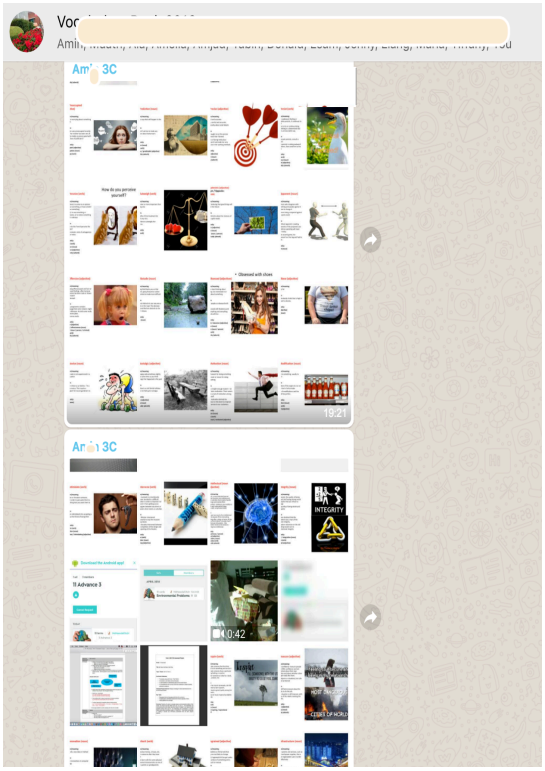
P1: it was boring.

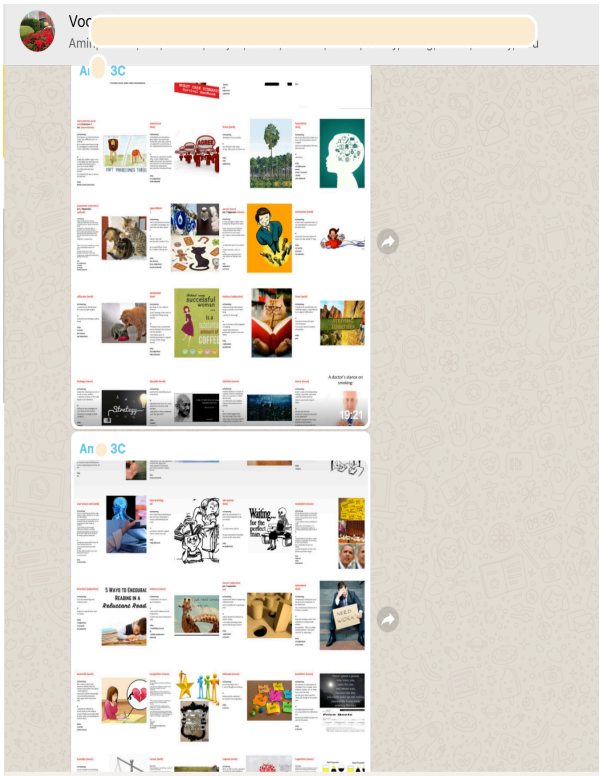
Interviewer: Yeah. Okay. So compared to telegram you think the installed app was a bit boring.
P1: Yeah.

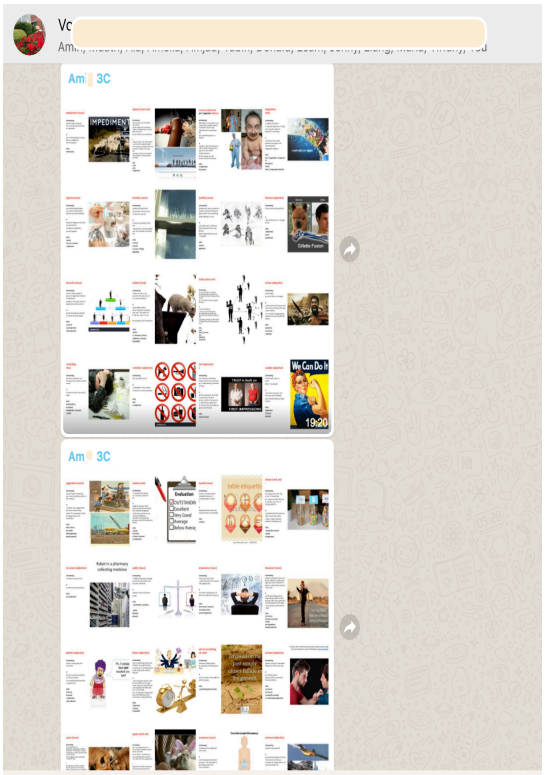
Interviewer: Okay. Thank you. And on a scale of one to nine where one is the least liked and nine is the most which of the following aspects of stage 2 or telegram app would you like the most images?
P1: Images 9
Interviewer: definitions?
P1: definitions 9
Interviewer: examples?
P1: 7
Interviewer: synonyms and antonyms?
P1: 8
Interviewer: pronunciation?
P1: 9
Interviewer: and finally word family or derivatives?
P1: 9
Interviewer: Thank you. So finally it would you like to continue developing your English language vocabulary using your chosen up and other similar apps?
P1: Yes, because it was it has an academic words. So it will be helped me to for the College of the university to do learning. Interviewer: That's great. Excellent. Yeah, thank you very much.

Appendix seventeen: Challenges encountered during the main study: Part A: Researcher's lost data which was retrieved through one motivated participant

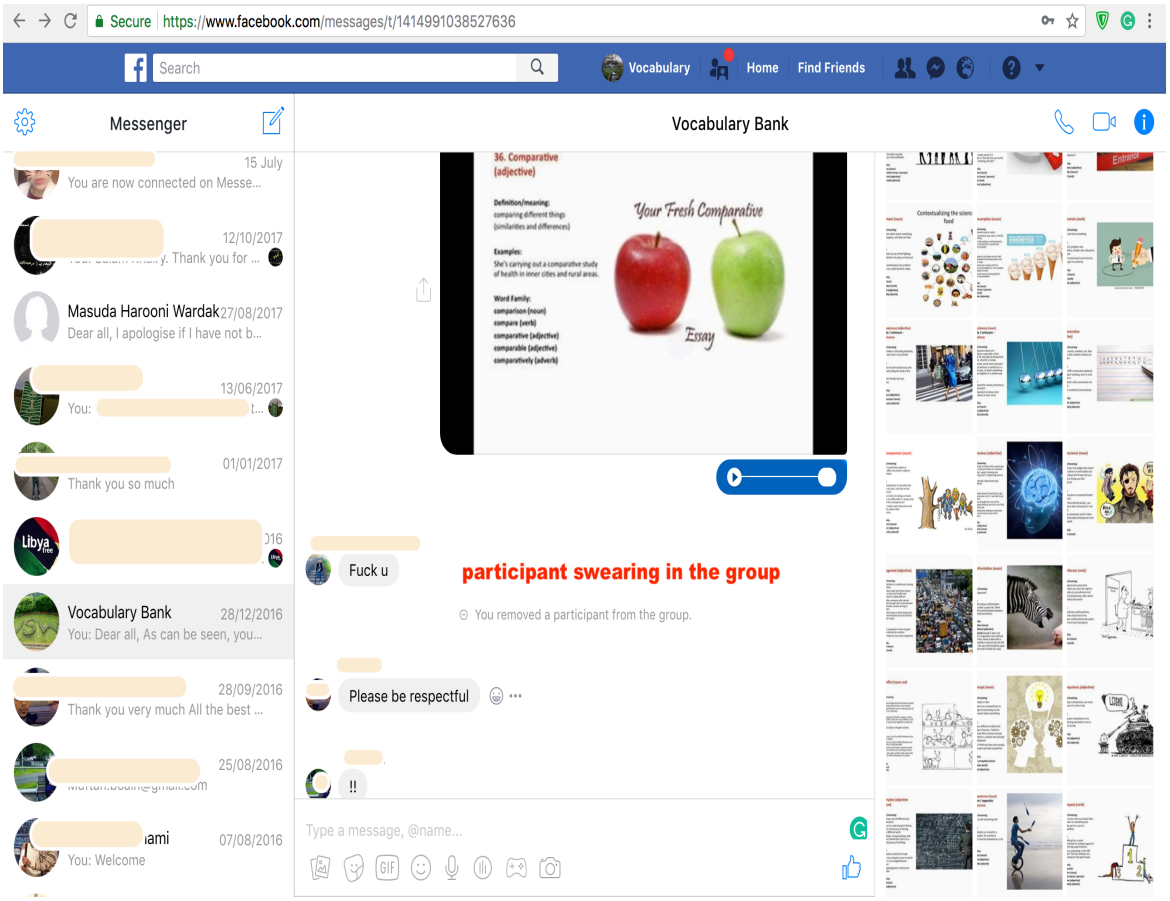




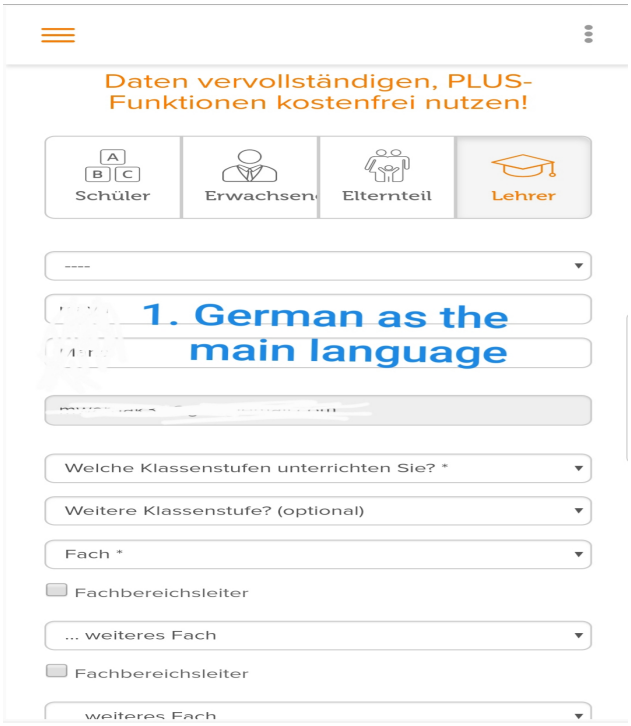


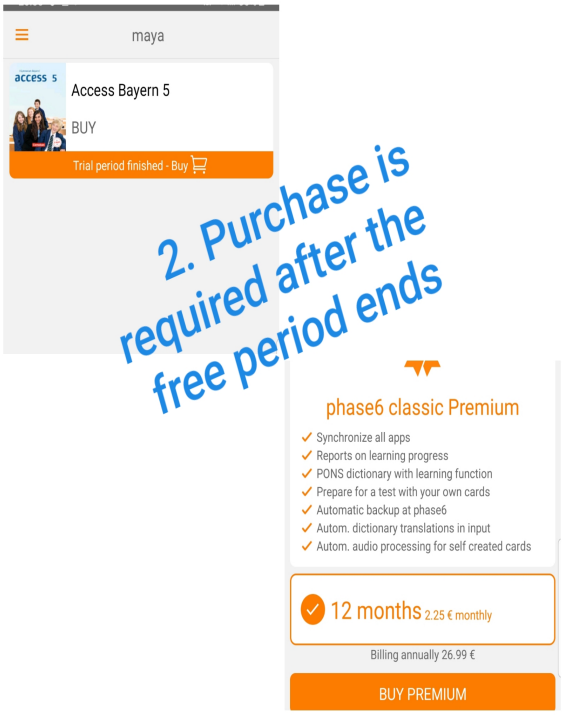


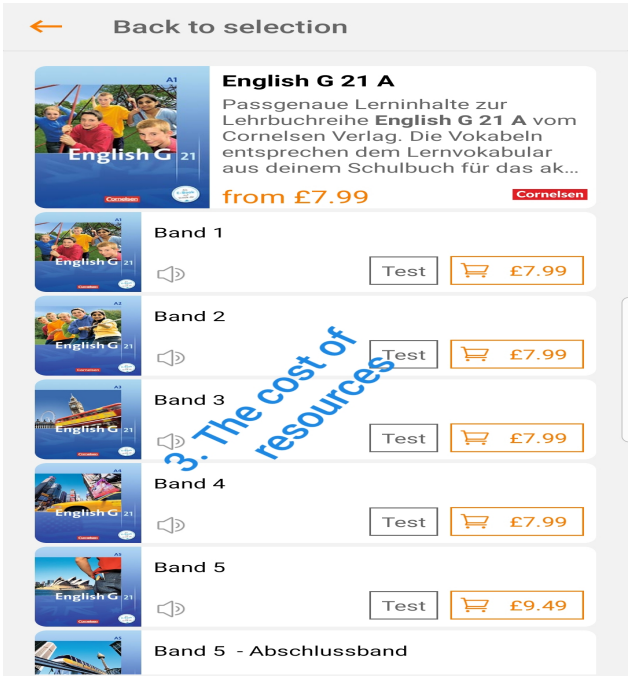
Appendix seventeen Part B: A participant using inappropriate language in the group

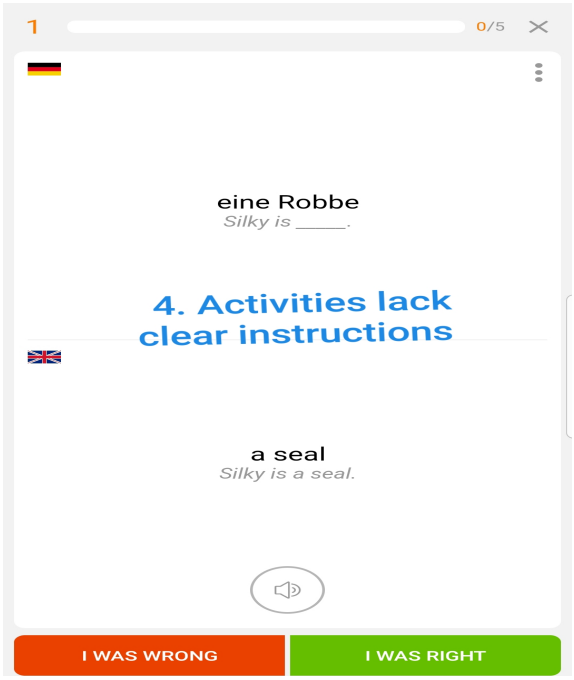


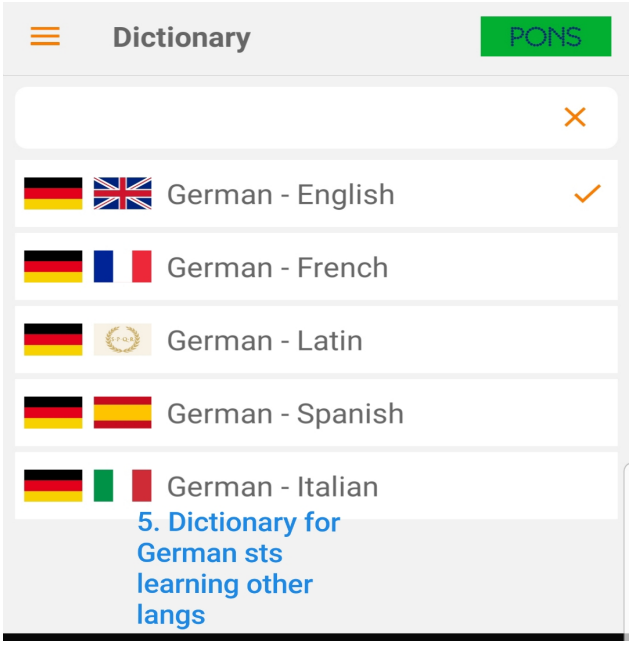
Appendix eighteen: Phase 6 application features







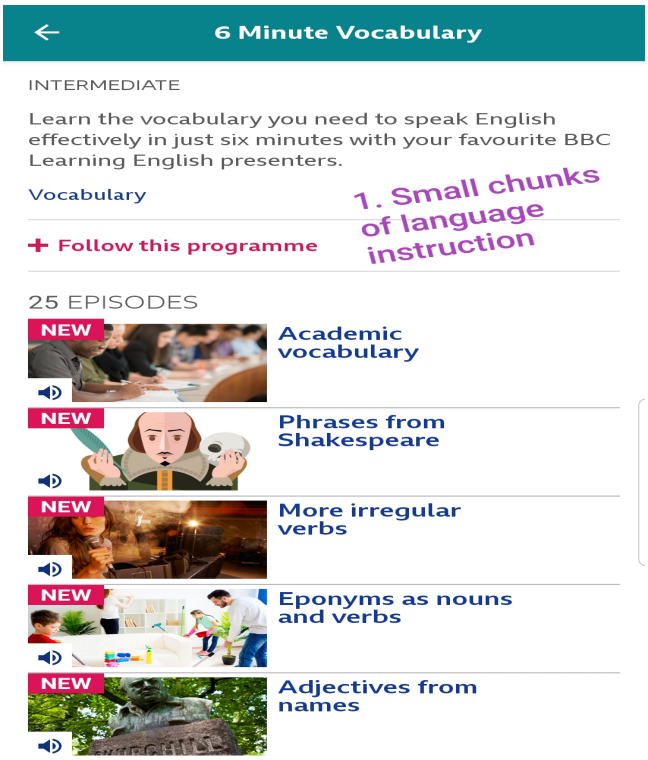


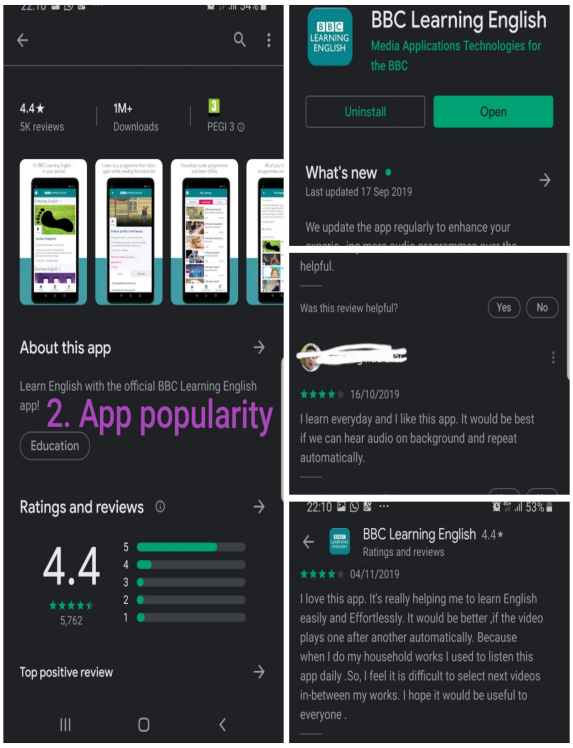

Dictionary
PONS
German - English
German - French
German - Latin
German - Spanish
German - Italian
5. Dictionary for German sts learning other langs

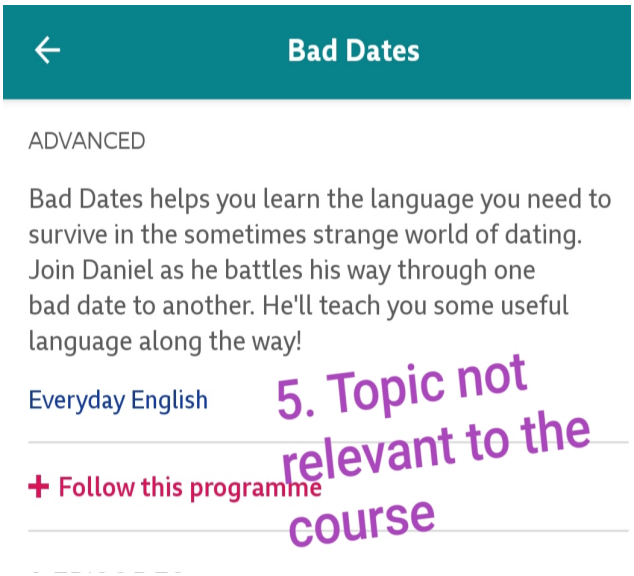

Memorize german vocabulary ... 4.4★
Ratings and reviews
26/10/2019
Idee gut, aber Bedienung ist etwas durcheinander. Weiss immer nicht, welche Kapitel ausgewählt,getestet werden. Ebenso sind die erwarteten Antworten unklar. Mal werden Präpositionen verlangt, mal nicht, audio passt oft nicht wörtlich zu dem Geschriebenen. Antworten wie "it isn't" und "is not" (andere formen auch) werden nicht beide akzepiert. Und viel wichtiger , Warum braucht die app so viele private rechte? Kontakte,kamera,mikrophon,identität. Nicht Akzeptabel!
Was this review helpful?
Yes
No
phase6.de: Vokabeln zum Schulbuch!
27/10/2019
Hallo
wir haben nur wenige Zeichen für eine Antwort. Unter Hilfe => Datenschutz findest du Infos zu den Berechtigungen,. Mit welcher Vokabelsammlung lernst du? Kannst du dich bitte mit deinem Eingabe-Problem an den Support wenden? Am Besten per E-Mail an androidmobile@phase-6.de - hier können wir dir dann ausführlicher antworten.
6. German language reviews
20/10/2019
Die App ist sehr gut Aber wenn man es z.B andersherum schreibt,wird es als falsch eingeschätzt

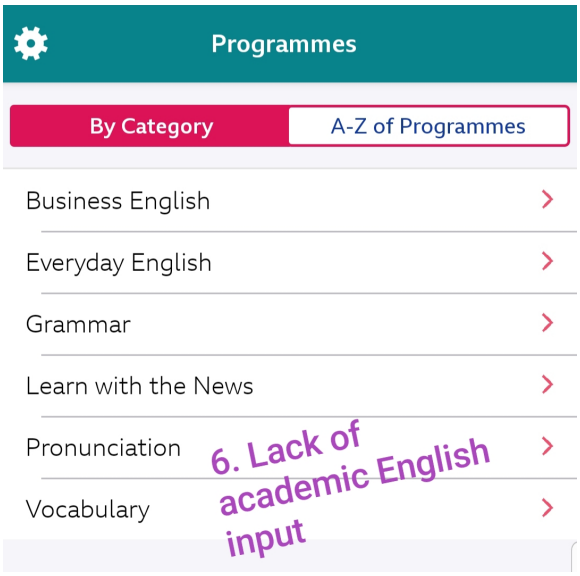

4.4★
9K reviews
500K+
Downloads
PEGI 3
About this app
phase6 is a vocabulary trainer to learn German as a foreign language
Education
7.Despite 500K+ downloads,it's for learning German
Ratings and reviews
4.4
9,853
Top positive review
A Google user

Appendix nineteen: BBC Learning English application features






Bad Dates
ADVANCED
Bad Dates helps you learn the language you need to survive in the sometimes strange world of dating. Join Daniel as he battles his way through one bad date to another. He'll teach you some useful language along the way!
Everyday English
5. Topic not relevant to the course
+ Follow this programme


Programmes
By Category
A-Z of Programmes
Business English
Everyday English
Grammar
Learn with the News
Pronunciation
Vocabulary
6. Lack of academic English input